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The Arris and Gale Lectures
ON
THE GENITAL FUNCTIONS OF THE DUCTLESS GLANDS IN THE FEMALE.

Delivered at the Royal College of Surgeons of England on March 10th and 12th, 1913,

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LECTURE II.[1]

Delivered on March 12th.

MR. PRESIDENT, LADIES, AND GENTLEMEN,—In the last lecture I endeavoured to estimate the direct and indirect influences of the ovaries in regard to the genital functions. In considering the indirect influences I discussed the effects of ovarian insufficiency, both in physiological and pathological circumstances, on what I may perhaps describe as the rest of the genital system of ductless glands, and I also demonstrated the effects produced on the general metabolism by this condition. In this lecture I shall reverse the process, and endeavour to trace as far as possible in the time at my disposal the influence of the rest of the ductless glands upon the ovaries and the reproductive functions generally.

When I allude to the rest of the ductless glands I refer to the thyroid, the pineal, the thymus, the pituitary, and the suprarenals. The carotid body and the rest of the chromophile system may be considered similar in function to the medulla of the suprarenals, since their method of development and physiological properties are the same. We know too little of the coccygeal body to discuss it. The most recent investigators attach no importance to this structure as an organ of internal secretion. Nor shall I consider the internal secretion of the pancreas, for concerning this also we have no evidence of value in regard to the subject we have in hand. It is probable that every cell in the body is a ductless gland, and has some influence on the life and functions of the rest. But at present such a conception exists only as a dream in the minds of philosophical biochemists.

The two great generalised functions of all living tissues are: firstly, the coördinated development and life of the individual; and secondly, the reproduction of the next generation.

The aggregations of the specialised cells for the regulation of the body metabolism, which are known as the ductless glands, have long been identified as having an important bearing on the well-being of the individual—that is, on the growth of the body, on the coördination of his or her structures, and possibly on the maintenance of health by the production of antitoxic bodies. But it is only of recent years that these same groups of cells have been shown to possess most important special influences over that other great function of the living organism—the reproduction of the species in all its intricate necessities. Even now we have only hazy notions as to what these influences are, so that every fact and every observation, positive or negative, right or wrong, should be carefully recorded, in order that little by little the missing links in the chain of physiological interaction that connects all these organs together may be fitted into place.

THE RELATION OF THE THYROID TO THE GENITAL SYSTEM.

We shall, perhaps, be in a better position to consider the changes that occur in the rest of the genital system if we first discuss the effect on the general metabolism of removal of this organ.

Effects of Thyroidectomy on the General Metabolism.

Different mammals vary very much in their power of withstanding the disastrous results which may follow complete removal. I have never observed any grave effects supervene on the removal of the thyroid in rabbits. This has been explained on the ground that the parathyroids are relatively large, and lie well away from the thyroid itself, and consequently cannot be removed without a careful search; in other words, they escape removal during the operation of thyroidectomy. Swale Vincent and Jolly have shown that after thyroidectomy the parathyroids actually secrete colloid, and, in fact, perform the functions of the thyroid, just as they resemble it in structure, after this operation. But I do not believe that this question of the remaining parathyroids is the whole truth.

I think rodents have less need of the thyroid than other mammals such as the carnivora. It may be because the diet is different, but also I feel sure it is due in some measure to the variations in the structure and function (or degrees of function) seen in the other ductless glands. I have already alluded to the differences in structure between the ovaries of rodents and the higher mammals.

If, however, we take cats and remove their thyroids many die in a few days, usually with convulsions. In these cases it is probable that the immediate result is due to the removal of the whole thyroid apparatus (thyro-parathyroid). Some, however, survive the operation for a long period of time. In all these cases one can demonstrate the removal of the whole thyroid together with the internal parathyroids which are embedded in the two lobes of the thyroid. So that one gets in these animals the true effects of thyroid insufficiency. The number in which the metabolism was investigated fully was small, for, as already stated, many died too soon for the metabolism, as represented by the urinary excretion, to be estimated. The record of one non-pregnant cat which was destroyed two and a half months after operation has been selected as typical. (Table III., cat No. 9.) Other cases were complicated by the cats having had kittens shortly before operation, and in consequence did not appear to be suitable for averaging.

It will be seen that in this animal acetone was present three times in 20 estimations after operation.

The calcium excreted after operation was the same in quantity as before operation. There is a drop in the phosphorus excretion, in spite of the increase in the post-operation specific gravity; and the total nitrogen and urea are increased out of proportion to this rise in the specific gravity. It will be noticed, also, that the ammonia coefficient is slightly increased.

I am well aware from my experience in these matters that the records of one animal cannot carry much weight. But this was my only uncomplicated and reliable result out of five non-pregnant animals on which I operated.

Before considering the effect of thyroidectomy on the rest of the ductless glands I will bring forward a rather important series of experiments in which thyroidectomy was performed on three pregnant cats which survived the operation for some time. They were carried out in order to observe the influence of the thyroid on the metabolism during pregnancy, especially with reference to the possible production of the symptoms of eclampsia with marked alterations in the ammonia coefficient. Further, I had in my mind the possibility that the secretion of the fœtal thyroids might reach the mother's circulation and mitigate the effects of the thyroidectomy performed on her.

The records of each case (Table IV., cats Nos. 2, 6, and 10) are drawn up to show the metabolism before operation, and in two cases after operation and before parturition. In one case the kittens were born alive at full term two days after the operation, before the estimations of the urinary metabolism had been resumed. It may be pointed out here that no estimations were carried out for a few days after any operation in order to avoid the effects of the anæsthetic.

It will be noticed that acetone, albumin, and sugar were found a good many times after operation in cat No. 2, and more frequently after parturition than before, without any real disturbance of the ammonia coefficient. Cat No. 10 gave birth ten days prematurely to stillborn kittens.

Turning to the averages (Table V.) we see that so long as the cats remained pregnant the calcium excretion remained constant, but that after parturition it was increased to treble the quantity. The phosphates after the birth of kittens showed a remarkable increase; and there is a considerable decrease in the urea excreted. There was, however, no disturbance of the ammonia coefficient.

[1] Lecture I. was published in THE LANCET of March 22nd, 1913, p. 809.

It does not appear probable, therefore, that the thyroid is in any way specifically connected with the production of eclampsia, as was originally suggested by Nicholson. It is true that two of our cats (Nos. 4 and 5) not included in the series, which were in the first half of pregnancy, died with convulsions in a few days, but the manner of death was similar in every respect to that seen in non-pregnant animals in similar circumstances.

The evidence of my experiments is in favour of the possibility that in the latter half of pregnancy the secretion of the fœtal thyroid may be conveyed to the mother.

especially true of the zona pellucida and the liquor folliculi, and appears to be a matter of some importance.

It seems that removal of the thyroid calls for a response from the ovary, just as oöphorectomy did from the thyroid. And the nature of the response, if my observations be correct, is one of considerable interest, for it brings forward evidence that the granulosa cells of the Graafian follicle form an organ of internal secretion. But this secretion is not connected with the integrity of the uterus, for the effect of thyroidectomy on this organ is remarkable. The uterus atrophies to a considerable extent. Fig. 8 (which appeared in

TABLE III.—*Removal of Thyroid. Averages of Metabolism Estimations of 24 hours' Specimen Urines.*

Cat No. 9 (Non-pregnant).

Date.	Number of specimens examined.	Specific gravity.	Diacetic acid.	Acetone.	Albumin.	Sugar.	Indican.	Ca %.	Cl %	P_2O_5 %.	Total N %.	Urea %.	NH_3 %.	Ammonia coefficient.		
														Urea N %.	NH_3N %.	Undet. N %.
Commenced 6/6/12	3	1040	0	0	0	0	Twice	0·0010	0·147	0·631	3·38	7·62	0·310	88·01	2·21	9·77
Operation 12/6/12																
Destroyed 30/8/12	20	1047	0	3 times	0	0	Once	0·0010	0·144	0·607	4·48	8·84	0·320	92·03	5·62	2·35

TABLE IV.—*Removal of Thyroid. Averages of Metabolism Estimations of 24 hours' Specimen Urines.*

Cat No. 2 (Pregnant).

Date.	Number of specimens examined.	Specific gravity.	Diacetic acid.	Acetone.	Albumin.	Sugar.	Indican.	Ca %.	Cl %.	P_2O_5 %.	Total N %.	Urea %.	NH_3 %.	Ammonia coefficient.		
														Urea N %.	NH_3N %.	Undet. N %.
Commenced 28/5/11	3	1031	0	0	0	0	0	—	0·035	0·261	2·98	6·04	0·151	94·56	4·16	1·28
Operation 31/5/11																
Had kittens 9/6/11	8	1009	0	4 times	5 times	7 times	0	0·0060	—	—	1·61	1·45	0·174	52·96	4·30	42·74
Destroyed 10/8/11	13	1040	0	12 times	4 times	9 times	6	0·0160	0·172	1·190	4·62	8·39	0·225	84·69	4·00	11·31
Cat No. 6 (Pregnant).																
Commenced 19/10/11	1	1044	0	0	0	Once	Once	0·0050	0·105	0·141	6·7	11·72	0·280	84·50	4·09	11·41
Operation 21/10/11																
Had kittens 23/10/11																
Died 20/11/11	8	1027	0	0	0	Once	4 times	0·0110	0·165	0·318	2·63	5·24	0·130	92·89	4·04	3·07
Cat No. 10 (Pregnant).																
Commenced 16/6/12	3	—	0	0	0	0	Once	0·0010	0·210	0·357	2·55	4·59	0·416	78·92	12·57	8·51
Operation 19/6/12																
Had kittens 29/6/12	3	1028	0	0	0	0	Twice	0·0010	0·211	0·254	3·13	6·35	0·592	92·38	1·81	5·81
Destroyed 24/10/12	11	1044	0	Once	0	0	0	0·0015	0·148	0·729	3·42	6·26	0·304	85·35	6·95	7·70

TABLE V.—*Averages of Metabolism Estimations of 24 hours' Specimen Urines from Three Pregnant Cats Before and After Removal of Thyroid.*

—	Number of specimens examined.	Specific gravity.	Diacetic acid.	Acetone.	Albumin.	Sugar.	Indican.	Ca %.	Cl %.	P_2O_5 %.	Total N %.	Urea %.	NH_3 %.	Ammonia coefficient.		
														Urea N %.	NH_3N %.	Undet. N %.
Before operation	2 approx.	1037	0	0	0	Once	Twice	0·0030	0·116	0·253	4·00	7·45	0·212	85·99	6·94	7·06
After operation and before having kittens	5 approx.	1018	0	4 times	5 times	7 times	Twice	0·0030	0·211	0·254	2·37	3·90	0·183	72·67	3·05	24·27
After having kittens	11 approx.	1037	0	13 times	4 times	10 times	10 times	0·0095	0·161	0·745	3·55	6·63	0·219	87·64	4·99	7·02

We now come to the consideration of thyroidectomy on the rest of the genital system.

Effect of Thyroidectomy on the Ovaries and Uterus.

The normal ovary of the cat, with which animal we are concerned in these experiments, shows certain affinities for eosin in some of its elements. The zona pellucida, the liquor folliculi, the interstitial cells, and the cells of the corpora lutea all stain faintly with eosin. After thyroidectomy all these elements show an increased avidity for eosin. This is

Lecture I., p. 815) represents the uterus of a normal cat, and Fig. 10 that of a cat after thyroidectomy. It will be observed that the uterus of the thyroidectomised cat shows very considerable muscular atrophy, quite as much as occurs after oöphorectomy. In this case the cat was pregnant when the thyroid was removed, the kittens were born two days later, and the animal died at the end of a month. The condition might, therefore, be described as one of superinvolution. But the same effect is obtained in the non-pregnant animal. The importance of this intense

atrophy will be considered directly; for before drawing our final conclusions of these results it will be advisable to consider the clinical observations that have been made in regard to insufficiency of the thyroid.

Clinical Observations on the Effect of Thyroid Insufficiency on the Genital Functions in Women.

These are quite well-known. We frequently see young girls with adiposity suffering from amenorrhœa; or we see the more marked insufficiency which produces myxodema, and is also invariably associated with suppression of the menstrual function.

Now both the minor and the major state of thyroid insufficiency are readily amenable to thyroid treatment, with one reservation—if the girl has suffered from thyroid insufficiency for some years past the period of puberty, and has never menstruated, then it may be impossible to relieve her genital condition, and the uterus may remain underdeveloped. If, on the other hand, the insufficiency has arisen later, after the subject has possessed full genital activity, then the uterus may, even after a long period of inactivity, resume its normal functions. I remember a lady who developed myxœdema and did not menstruate for some years. After a course of thyroid treatment she not only menstruated regularly but conceived.

Thus we have an explanation of the condition of the uterus sometimes observed in women with thyroid insufficiency. It is a condition of atropy such as is seen in wild animals during seasonal inactivity, and it is one which can be reawaked to full activity, like the physiologically inactive organ. Further, the full and increased activity—if my interpretation of the staining properties be correct—of the secretion of the membrana granulosa cells, with inactivity of the uterus, puts out of court the hypothesis that the cyclic changes in the uterus are due to this secretion. On the other hand, it is possible that the secretion of the interstitial cells is rendered insufficient in the absence of thyroid secretion. It is along these lines that I am endeavouring at the present time to solve the question of obtaining an active extract for therapeutic purposes in cases of ovarian insufficiency.

To complete the picture of thyroid insufficiency we must note the changes that appear constant in the suprarenals and pituitary in these circumstances. Later we shall have to consider these ductless glands more fully.

Effect of Thyroidectomy on the Suprarenals.

The normal suprarenal structure is well-known, but I shall refer to it briefly in order better to illustrate the changes that occur, physiologically and pathologically, in the cat. The suprarenal is divided into two parts, the cortex and the medulla. These have different physiological properties when examined experimentally. The medulla produces the well-known pressor effect of adrenin, while the cortex is inactive. Abelous and his co-workers suggest that the cortex produces pro-adrenin; this is supported by Schäfer and Herring, and appears highly probable. In addition, the cortex has direct genital functions to be referred to later.

Now the changes that seem to indicate excessive activity of the suprarenals occur in the cortex; and they may be seen normally in pregnancy, and, so far as we know, in ordinary circumstances. The normal appearances differ, however, from those associated with the activity following thyroidectomy. In three of my animals an actual calcareous deposit was found in the zona fasciculata subsequently to thyroidectomy. I have not seen this condition in a normal suprarenal gland. I take it that what occurs is the production of fatty substances in quantities greater than can be immediately dealt with; then calcium soaps are formed, and finally calcareous deposits are produced, just as may occur elsewhere in the body after a similar series of chemical reactions. Evidently, then, thyroidectomy stimulates the suprarenal cortex to excessive secretion, and this no doubt tends to produce calcium retention and prevent excretion.

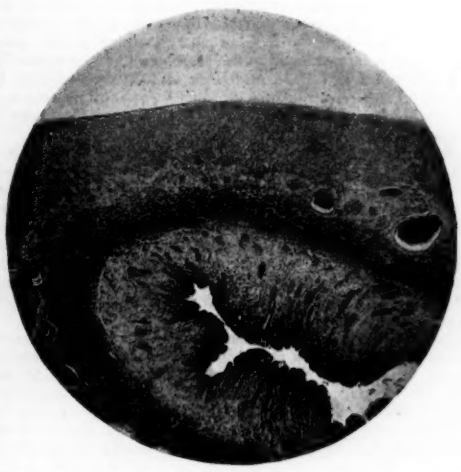
Effect of Thyroidectomy on the Pituitary.

That changes occur in the pituitary after thyroidectomy has long been known. Rogowitsch was the first to call attention to the fact. Herring states that the only change to be noted is an increase in the number of what he calls 'hyaline bodies' in the pars nervosa. These so-called 'hyaline bodies' are supposed to represent the secretion of the pars intermedia. But there can be no doubt that some—if not all—represent degenerated pars intermedia cells which have migrated into the pars nervosa. There the secretion, in my opinion, becomes converted into a pressor substance (infundibulin).

While it is, of course, quite certain, as Herring first observed and Cushing also noted, that this process does occur, I have found that it is not always so marked as we have been led to expect. Also in contradistinction to Herring, I have found definite changes in the anterior lobe. These were most marked in animals which were pregnant when thyroidectomy was performed.

The changes that occur seem to be an increase in active eosinophile cells at the expense of the large basophiles; and both in the pregnant and non-pregnant animal there is an increase of large active chromophobe cells, such as occurs normally in pregnancy. The latter are, of course, most pronounced in an animal in which thyroidectomy has been performed during pregnancy. The condition was well seen in cat No. 10 of my series. Ten days after operation two premature kittens were born. After a further interval of 120 days the animal was destroyed with chloroform. In this length of time all the chromophobe 'pregnancy' cells would have disappeared in the ordinary course of events. But as the result of thyroidectomy they not only

FIG. 10.



Uterus of cat one month after thyroidectomy. Atrophy of muscle coats. × 75.

persisted but showed an increase in secretory activity. The secretion appeared to form vacuoles among the cells. In this case the pars nervosa showed no abnormal invasion of pars intermedia cells. In the case of a non-pregnant cat (No. 9), killed 79 days after thyroidectomy, again many active chromophobe cells were to be seen in the pars anterior, and an increase in active eosinophile cells at the expense of the basophiles.

We learn, then, from these observations that thyroidectomy causes an increase in the secretory activity of all parts of the pituitary body.

THE RELATION OF THE PINEAL TO THE GENITAL SYSTEM.

The pineal gland has never been successfully removed from mammals; and, owing to its inaccessible position in the brain, there seems to be little likelihood of experimental extirpation ever giving satisfactory results. The effects of castration on the pineal have already been mentioned.

The only other direct evidence available is that obtained clinically.

Clinical Effects of Pineal Disease on the Genital System.

Comparatively few observations have been made, but in most cases where a tumour has been observed it has been a teratoma, and somewhat remarkable symptoms have been seen. When the patient was a child, as was usually the case, there was a precocious development of the skeletal structures, and also of the genital organs. According to L. Kidd, who has recently reviewed the literature of the

pineal body, all the cases recorded occurred in boys. In a few instances obesity has been seen, but apparently unaccompanied by genital atrophy.

Biedl thinks that the sexual precocity is due to insufficiency of the pineal body, and that the normal pineal secretion restrains the development of the genital organs. There is no reliable evidence in support of the latter statement.

THE RELATION OF THE PITUITARY TO THE GENITAL SYSTEM.

Some of the normal physiological changes in the pituitary which occur are well known. But there is much need for a systematic investigation into the age changes in this organ. So far as I know only a few isolated observations have been recorded.

There is reason to believe that the secretions of the pituitary determine many of the metabolic functions necessary for the establishment of puberty or sexual maturity.

We fully recognise the remarkable enlargement and the histological changes that occur in this gland as the result of pregnancy. The eosinophilia disappears and a large portion of the cells of the pars anterior become chromophobe, and, as already mentioned, have been called 'pregnancy cells.' No doubt this change is brought about by the needs of the maternal metabolism which the development of the fœtus entails. The changes seen in the pituitary during pregnancy cannot be produced to the same extent experimentally.

A few years ago Dale, and Hick and I, showed that an extract of the posterior lobe produces powerful uterine contractions. This effect may be produced physiologically in labour by the infundibular extract.

Ott and Scott first showed that the same extract is a galactagogue. It is not known how this result is produced; but most of the evidence goes to show that it is an expressor effect. It would be interesting if it were a fact, of which we have no proof, that the pituitary normally promotes the secretion of milk. It is, however, in my opinion certain that after the birth of the child the stream of metabolic products directed to its maintenance and growth in the womb are diverted to the mammary secretion, which is to supply its post-natal necessities.

I will now shortly recapitulate the work of others in regard to extirpation of the pituitary, partial or complete, in so far as it is of importance to our subject. At the same time it is necessary to state that none of the experimental work fulfils the highest ideals owing to the inaccessibility of this organ; consequently, the last word has not been said in regard to the results that may be obtained.

Effects of Removal of the Pituitary (Partial or Complete).

Most of the early work on the extirpation of the pituitary was absolutely unreliable, and it was not until Paulesco improved the technique, which Harvey Cushing and Biedl subsequently adopted, that results worthy of consideration were obtained.

Cushing's conclusions may be summed up as follows: Complete extirpation caused death in a short time. The same effect was obtained by complete extirpation of the pars anterior. Partial removal of the anterior lobe led to the condition known as dystrophia adiposo-genitalis—that is to say, there was great obesity, with atrophy of the genital organs and undergrowth in young animals.

Biedl confirmed these findings, and also stated that the posterior lobe (pars intermedia and pars nervosa) might be removed without producing symptoms.

It is difficult to believe in the results of experiments in which the anterior or posterior lobe are said to have been removed separately. But there can be no doubt that partial removal of the anterior lobe is not difficult to accomplish; and the results following this procedure should be reliable.

It is the effect of dystrophia adiposo-genitalis which is particularly interesting to our present study. And it is to be noted that Cushing in his recent work, if I understand him correctly, puts forward views diametrically opposed to the results obtained in the experiments which were previously published by him. He now attributes the symptoms mentioned to insufficiency of the posterior lobe. Thus the confusion that has so long existed becomes "confusion worse confounded," and, as already stated, can in my opinion only be dispelled by considering the whole pituitary as one organ.

Effects of Removal of the Pars Anterior on the Ovaries and Uterus.

There appears to be no doubt that the ovaries undergo hypoplasic changes after partial removal of the anterior lobe. There is no good description of the histological appearances, but Cushing states that the follicles disappear while the interstitial cells persist. The uterus also undergoes atrophy. I have had no opportunity of examining ovaries after this operation, but since the uterus atrophies one would have expected to find the same changes as those which follow thyroidectomy—that is to say, the reverse of what has been found by Cushing.

Effect of Removal of the Pars Anterior on the Thyroid.

It has been noted by Cushing and others that there is a remarkable degree of hyperplasia in the thyroid after partial removal of the anterior lobe. This condition is said to subside eventually, and be superseded by a considerable colloid formation, with apparent disappearance of epithelial activity.

Effect of Removal of the Pars Anterior on the Thymus.

This leads to hypertrophy of the thymus just as the condition of hypopituitarism is often associated with thymus enlargement.

Effect of Removal of the Pars Anterior on the Suprarenals.

The operation, according to Cushing, is followed by hyperplasia and lipoid vacuolation of the cells of the zona fasciculata.

Clinical Observations of the Effect of Pituitary Insufficiency on the Genital Functions in Women.

These have been made chiefly in regard to acromegaly and the condition already described as dystrophia adiposo-genitalis. The former disease is supposed to be due to excess of secretion and the latter to deficiency. The relationship of these two conditions, however, is not quite so simple as the above statement would seem to imply.

It is usual to find amenorrhœa both with acromegaly and with the condition which is supposed to represent the opposite, in regard to secretory activity.

With acromegaly the excessive thickening of bones indicates calcium retention—a condition which appears associated with masculinity, as we shall see when dealing with the suprarenals. Not long ago I saw with Dr. Amand Routh a patient with acromegaly who developed a deep voice, and had a very considerable hypertrophy of the clitoris. Some might be inclined to attribute this to suprarenal involvement in a polyglandular syndrome. According to Cushing, however, hyperpituitarism (acromegaly) is often associated with low blood pressure, asthenia, and pigmentation, which indicate suprarenal insufficiency, and not the reverse. Indeed, I have seen a case of acromegaly which presented all the symptoms of Addison's disease.

In view of these facts we must look upon acromegaly as a condition which produces masculinity and consequently amenorrhœa.

In cases of dystrophia adiposo-genitalis genital atrophy is invariable, yet there is no doubt that if the individual has had functional activity before the onset of the disease this activity may return on relief of the condition by decompression or by the administration of pituitary extract. I have myself observed this result follow injections of anterior lobe extract in dystrophia adiposo-genitalis. Similarly I have seen good results after the administration of this preparation in cases in which the patient was very obese and suffered from amenorrhœa, without showing the signs of intracranial pressure, which are usual when the condition has reached the stage of dystrophia adiposo-genitalis.

Success is the more likely when the patient has had some functional activity previously; but it is possible that delayed menstruation with obesity might be successfully treated if the patient has not long passed the usual age of puberty.

THE RELATION OF THE THYMUS GLAND TO THE GENITAL SYSTEM.

The thymus has been shown to have a very important relation to the development of the individual and of her reproductive functions. It is probable that once the genital functions are established the thymus rapidly undergoes atrophy, and plays no further part in the metabolism of reproduction. We have already seen that the thymus undergoes hyperplasia after removal of the ovaries.

Effects of Thymectomy on the Ovaries and on the Calcium Metabolism.

Paton found that if the operation be performed before puberty there is a rapid development of the genital gland. It appears, therefore, as if the thymus either inhibits the development of the ovaries (Biedl), or that their development follows the withdrawal of the thymus secretion.

It is highly probable that the thymus is intimately connected with the calcium metabolism; but it can hardly be, as Biedl suggests, that the effect of its secretion is to cause calcium retention in the bones—although several investigators (Basch, Cozzolino, Tarulli, and Lo Monaco) have found that rickets follows thymectomy in young animals, an effect not confirmed by Paton—for the skeletal structures become much more heavily laden with calcium phosphate after puberty when the gland atrophies.

The matter is one of considerable difficulty. But if thymectomy leads to increased calcium excretion and bone softening the growth of the genital gland which promotes the excretion of calcium would not tend to improve matters, unless—and this is possible—the development of the genital gland causes an increased secretion from the suprarenals, which leads to calcium retention.

Effects of Thymectomy on the Other Ductless Glands.

No reliable work appears to have been done on these lines. It is urgently needed, in order to clear up many of the difficulties concerning the relation of the thymus to the general metabolism.

THE RELATION OF THE SUPRARENALS TO THE GENITAL SYSTEM.

These glands may be studied in the same way that we have already adopted—that is, from a physiological and pathological standpoint.

In pregnancy certain changes occur normally in the suprarenals. So far as my own observations go these are confined to the cortex. The cells of the zona fasciculata appear swollen and cloudy. Some observers (Guieysse and Gottschau) have found that in pregnancy the zona fasciculata increases in thickness at the expense of the zona reticularis and medulla. My own observations are in accord with this. The zona reticularis does not increase at the expense of the zona fasciculata in pregnancy, as it does after oöphorectomy.

Conflicting views as to the effects of castration have been put forward by Schenk, Cecca, and others. A source of error in the estimation of the thickness of the various zones is liable to arise unless care be taken to cut mesial sections; or, better still, serial sections.

Effects of the Removal of the Suprarenals.

In most mammals complete removal of the suprarenals causes death in from a few hours to a few days. The animal does not eat; it sits very quietly, gradually becomes weaker, tremors occur, and death supervenes. This course of events occurs so rapidly that as a rule no estimation can be made of the metabolism, and any changes observable in other ductless glands must be of an acute character and of less value from a practical point of view than those which are obtained by the production of chronic insufficiency, a condition difficult to bring about experimentally. Acute results may, however, be useful as indicating the trend of events.

Many rats, owing to the fact that a large percentage of them have accessory interrenals consisting of cortical substance, are said to be able to survive extirpation of the main organs. I have had no experience of extirpation experiments on these animals. My investigations have been carried out on rabbits and cats. Those animals from which both suprarenals were removed either at one or at two sittings died within 48 hours. I tried, therefore, the effect of the removal of one suprarenal in the hope of being able to produce insufficiency, since we know the other suprarenal hypertrophies in these circumstances and shows a condition somewhat comparable with the hyperplasia of pregnancy. Two cats gave negative results in regard to the metabolism, but with two rabbits I obtained definite results. One of the animals was destroyed at the end of 30 days, as it was obviously dying. It was much emaciated, its weight having dropped from 2000 grammes to 1400 grammes. The post-mortem notes run as follows: "No cause of death found. The site of the previous operation unrecognisable except for the absence of the gland."

The other rabbit died at the end of 127 days. It also was greatly emaciated, the weight having decreased from 1710 grammes to 1020 grammes. At first the animal gained weight after the operation and then it steadily lost ground. No cause for death was found.

These results are apparently of some value, for according to most recent authorities unilateral extirpation in rabbits produces no symptoms.

With regard to the metabolism we obtained very interesting records. In each case a considerable increase in the excretion of calcium was observed (Table VI.). In one case

TABLE VI.—*Removal of Left Suprarenal. Averages of Metabolism Estimations of 24 hours' Specimen Urines.*

Date.	Number of specimens examined.	Specific gravity.	Diacetic acid.	Acetone.	Albumin.	Sugar.	Indican.	Ca %.	Cl %.	P_2O_5 %.	Total N %.	Urea %.	NH_3 %.	Ammonia coefficient. Urea N %.	NH_3N %.	Undet. N %.
Rabbit No. 2.																
Commenced 23/8/12	4	1023	0	0	0	0	0	0·0030	0·170	0·206	1·16	2·25	0·070	87·78	3·69	8·53
Operation 28/8/12																
Destroyed 27/9/12	13	1026	0	0	0	0	0	0·0210	0·192	0·623	1·58	3·09	0·036	91·26	1·96	6·88
Rabbit No. 4.																
Commenced 30/8/12	2	1018	0	0	0	0	0	0·0017	0·152	0·200	0·64	1·12	0·227	80·69	3·27	16·04
Operation 4/9/12																
Died 9/1/13	33	1030	0	0	0	0	4 times	0·0280	0·268	0·331	1·59	2·93	0·045	85·84	2·32	11·84

TABLE VII.—*Averages of Metabolism Estimations of 24 hours' Specimen Urines from Two Rabbits Before and After Removal of Suprarenals.*

—	Number of specimens examined.	Specific gravity.	Diacetic acid.	Acetone.	Albumin.	Sugar.	Indican.	Ca %.	Cl %.	P_2O_5 %.	Total N %.	Urea %.	NH_3 %.	Ammonia coefficient. Urea N %.	NH_3N %.	Undet. N %.
Before operation	3	1020	0	0	0	0	0	0·0023	0·161	0·203	0·90	1·68	0·148	84·23	3·48	12·8
After operation	23	1028	0	0	0	0	4 times	0·0240	0·230	0·577	1·58	3·01	0·040	88·55	2·09	9·3

the average quantity excreted after operation was seven times as much as that excreted before operation. In the other case it was sixteen times as much. The average for the two cases was, of course, between these figures (Table VII.).

The excretion of phosphorus was much increased but not in the proportion one might have expected.

The urea excretion was increased out of proportion to the differences between the specific gravities before and after operation.

Now this increase of the calcium excretion is of very considerable interest, and I much regret not having a longer series of cases. It is well known that the view has been advanced that osteomalacia is due to insufficiency of suprarenal secretion, and Bossi first called attention to the beneficial results to be obtained by the injection of adrenin in these cases. I have not met with a case of osteomalacia in recent years, so I have had no experience of this treatment. But these experiments give very strong support to this view of Bossi, not only in the metabolism results, but in a most striking way in regard to the bones of one of these animals.

The bones of the forelegs—on which I presume a good deal of weight would fall—were found to be markedly bent. Fig. 11 shows the normal condition of the bones of the forelegs. Fig. 12 is a radiogram of the condition found in one of the rabbits. The bones of the back legs, which are thicker, were only slightly curved. But owing to the manner a rabbit sits very little weight would fall on these bones. I regret that a radiogram was not taken before operation, but I hardly think such curving could have escaped notice during the handling of the animal at an operation. And the boy who has charge of my animals, and, in fact, discovered the condition, is quite certain it followed the operation, and I can hardly understand how it could have been otherwise. It is to be remarked that it was in this animal that the largest quantities of calcium were excreted. This is, however, such an important case that I feel constrained to play the part of the devil's advocate in regard to it.

The bones of these animals were chemically examined and compared with the bones of normal animals, but I do not include the records here, as we have been unable to conceive any satisfactory way of interpreting the results. Bones deficient in calcium weigh lighter than bones that are rich in it. So that if we take a gramme of osteomalacia bone and estimate the quantity of calcium we would find much the same quantity as in the same weight normal bone. Again, the percentages of the constituents vary normally to a considerable extent according to the age of the animal and other factors.

Effects of Suprarenal Removal upon the Pituitary Body.

The changes that occur seem to be much the same whether the insufficiency be acute or chronic; thus in cat No. 1 of my series of suprarenal removals the glands from both sides were removed at the same time. There was an interval of 36 hours between operation and death.

The cells of the pars anterior show a marked degree of chromophobia with a moderate degree of faint eosinophilia. In many places the nuclei are very deeply stained with hæmatoxylin.

In the pars intermedia the cells are discrete—that is to say, they are not fused—and show no special activity; the nuclei stand out prominently.

The pars nervosa is freely invaded by the cells of the pars intermedia, but the nuclei only are prominent, as though they were left stranded after the disappearance of the cell cytoplasm.

Exactly similar changes were noted in rabbit No. 2, which showed such marked symptoms of suprarenal insufficiency, as already recorded. The anterior lobe showed very well the chromophobe cells, and the faint blurred character of the eosinophile staining.

Taking all the facts into consideration I hardly think we can come to any conclusion other than that the anterior lobe shows greatly increased activity. The pars intermedia is apparently not in an actively secreting condition, but the extensive invasion of the pars nervosa by pars intermedia cells and the immediate disappearance of the cell cytoplasm appears to indicate that an attempt is being made to counterbalance the loss of adrenin by the rapid production of infundibulin.

Effect of Removal of the Suprarenals upon the Thyroid.

I have been unable to trace any histological change either in acute or chronic suprarenal insufficiency.

Effects of Removal of Suprarenals on the Ovaries and Uterus.

There appears to be no histological change of importance in the ovary, but it is worthy of note that the normal eosinophilia of the zona pellucida is not decreased, rather if anything is it increased. After removal of one suprarenal, if insufficiency be produced, the uterus appears to undergo changes comparable with those that are seen after thyroidectomy, but the muscular atrophy appears to be less in extent; probably this is due to the state of incomplete insufficiency (Fig. 13).

Clinical Observations of the Effect of Pathological Lesions of the Suprarenals on the Genital System.

We meet with conditions in the human subject which represent both an under-secretion and an over-secretion of the suprarenals. This is decided on clinical and histological evidence. At the same time we are still in the dark as to the exact relationship of the cortex to the medulla.

In Addison's disease we have what are apparently the symptoms of insufficiency of medullary secretion, as is shown by the low blood pressure and general muscular weakness. But in this disease the cortex also is destroyed.

It is doubtful if sufficient pathological observations have been made with a view of observing changes in the ovary and uterus to enable us to give any definite statements regarding them.

Amenorrhœa is, I believe, usually associated with Addison's disease, but this may be due solely to the effects of a condition which produces general progressive enfeeblement. On the other hand, our experimental evidence indicates that atrophy of the uterus presumably with insufficiency of the function of the interstitial cells occurs in these circumstances.

The other pathological lesions which have been subjected to a good deal of attention lately are hyperplasia and tumour formation in the suprarenal cortex. For some years these lesions have been known to be associated with extraordinary changes in the primary and secondary sex characteristics. Attention was first called to these interesting phenomena by Woolley, Bulloch and Sequeira, and Neugebauer.

Last year my colleague Professor Ernest Glynn reviewed exhaustively the whole subject, and added five fresh cases in children to those already collected by Bulloch. Out of 17 cases in children, 14 were females. In these there were usually skeletal overgrowth, hair on the face and pubes, and sometimes hypertrophy of the clitoris. Further, Glynn collected six cases occurring in young adult females, in all of whom there was growth of hair on the face, shrinkage of the breasts, amenorrhœa, and sometimes a masculine voice. Pathologically, the suprarenal enlargement in the children and young adult females was unilateral and neoplastic in character, and directly or indirectly caused death. Metastases were sometimes found.

In a second group of cases there were 13 pseudohermaphrodites, 12 being females, and in these the suprarenal enlargement was bilateral, hyperplastic in nature, and there were no metastases.

Glynn suggested that in these cases hyperplasia of the suprarenal cortex occurred in fœtal life before the differentiation of the genital ducts, and led to the persistence of the Wolffian derivatives, thus causing female pseudohermaphroditism.

No sex changes are associated with tumours of the suprarenal cortex when they occur in adult males or in women after the menopause.

This body of pathological evidence is of great value, and it shows how closely the adrenal cortex, which is developed from the mesothelium of the Wolffian ridge adjacent to the germinal area, is connected with sex characteristics. How far the influence of the suprarenal cortex acts in conjunction with the sex gland is not known. Probably there is some correlation between them in normal circumstances.

I now come to the last and, in some ways, the most difficult part of my task.

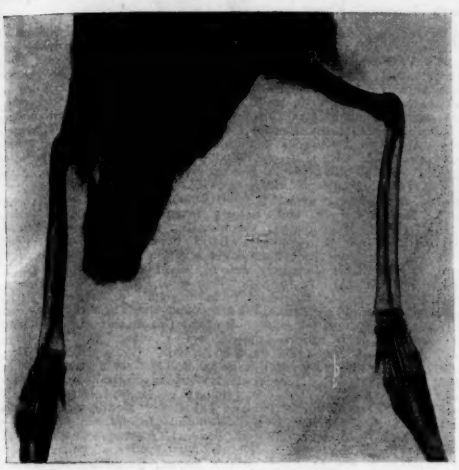
THE CORRELATION OF THE INTERNAL SECRETIONS IN REGARD TO THEIR GENITAL FUNCTIONS.

I have endeavoured to trace, for the most part from my own observations, the disjointed facts concerning the influences

exerted by the different members of the ductless gland system upon one another and on the metabolism generally, in so far as the genital system is concerned, and in so doing I have sometimes shown clearly the nature of the associations between the different organs.

But it is absolutely impossible at the present time to correlate fully all their functions, so that perhaps the less said now the less there will be to withdraw at some future date. In view, however, of what I said at the commencement as to the necessity for a lead in this intricate matter, I cannot refrain from enunciating what I believe to be the general principles. I shall not have time further to analyse the details.

FIG. 11.



X ray photograph of the bones of the forelegs of a normal rabbit. ½.

FIG. 12.

X ray photograph of the bones of the forelegs of a rabbit after unilateral suprarenal removal. ½.

It appears, from the evidence at our disposal, that in spite of great variations in the structure of the ductless glands in different mammals, the *total functional result* is the same in so far as the genital processes are concerned. The variations in function that depend on the differences of structure are probably related to differences in the food and habits of life.

In adapting our knowledge to the requirements of human physiology and pathology we must take into account *both* the essential functions I have already referred to—the individual metabolism of the mother, and the metabolism of her reproductive functions—for they are completely interdependent.

We have seen as the result of our studies that the ovaries, on the one hand, have as their share of these dual functions the onus of ensuring the reproduction of the species, by furnishing the ova, and by keeping active the rest of the genital structures and functions. And, further, the secretions of the ovary are concerned in keeping the other members of the ductless gland system in touch with the necessities of the reproductive situation. The latter function is of the deepest importance, and is one which explains much that would otherwise be obscure.

When the reproductive functions cease and the ovaries atrophy at the menopause the harmony that previously existed between the general and the genital metabolism is temporarily deranged, and various disturbances may ensue. And it is only by the careful investigation of each menopausal case that one can arrive at a determination of the manner in which the balance has been upset. It is impossible always to alleviate the symptoms, but the basis of treatment rests on the regulation of the existing disarrangement by the administration of the necessary secretions. Some patients react to thyroid extract, some to pituitary, others, again, to combinations, so great are the individual variations. In most cases a natural readjustment takes place in the course of time.

So that, strictly speaking, the ovary is only concerned in the temporary function of reproducing the species; and, by its hormones or internal secretions, of bending the metabolism of the body to its purpose. As accessory to these functions the ovary has been supposed to be responsible for the beauty of the vessel by means of which its ends are to be attained. But to-day we are beginning to wonder how far the ovary does influence secondary sex characteristics, and whether full individual secondary characteristics can be obtained by the influence of the ovary alone.

We have evidence that hyperplasia of the suprarenal cortex can upset any influence the female genital gland may be supposed to possess, and can produce in a female some of the secondary characteristics of the male, and even partially change the genitalia to complete the picture.

I well remember seeing a case under the care of Dr. Russell Andrews. The subject possessed every female characteristic except for the absence of uterus, Fallopian tubes, and ovaries; instead there were testes within the abdominal cavity. This individual was a male pseudo-hermaphrodite with the pure secondary characteristics of a female, and a prepossessing one at that. Such a condition could not have existed with hyperplasia of the suprarenal cortex; indeed, it is probable there was hypoplasia.

Any influence the ovary has over the general metabolism is, then, related to and

FIG. 13.

Uterus of a rabbit after unilateral suprarenal removal. Moderate degree of muscular atrophy. × 75.

dependent on its primary reproductive function. I do not believe that it influences the metabolism except in so far as this special function is concerned. Of course, removal of the ovaries may produce a temporary disturbance, but this has already been explained, and does not invalidate the view just mentioned.

On the other hand, the rest of the ductless gland system is related to the genital functions in various ways. Firstly, some of the members—the thyroid, pituitary, and suprarenals—influence the development and subsequently preserve the integrity and activity of the genitalia, as I have already demonstrated. Others—the thymus, and possibly the pineal—appear to prevent sexual precocity. Secondly, all the ductless glands control the metabolism in response to the necessities of the genital functions. But, in addition, they adapt the whole organism to the possibility of the situation, and regulate the secondary characteristics, both physical and psychical, to suit the needs of the individual. Once, however, the reproductive organs are removed or undergo atrophy, the primary genital functions of the rest of the ductless glands cease, and the rearrangement of the metabolism that follows produces what are known as the symptoms of the menopause. Contrariwise, insufficiency of the thyroid, pituitary, or suprarenals causes the cessation of the genital functions with atrophy of the uterus.

As to the more particular parts played in the metabolism by each member of the ductless gland system, these have already been specified.

In spite, therefore, of the reluctance to correlate our knowledge shown by most investigators the matter is not one of very great complexity if my views be correct in a general way, although there remains much detail to fill in.

As soon as possible we must come to a conclusion as to what are the facts; so much work that has been done is contradictory. There is, therefore, so much more the need for further efforts.

In concluding, I would again insist that in order to solve completely the problems surrounding the genital functions, we must focus at one and the same time the two essential processes of life—the individual metabolism and the reproductive metabolism. They are absolutely interdependent. Indeed, the individual metabolism is the reproductive metabolism. It is the neglect of this point of view that has brought about much of the confusion that exists.

Weismann and Ray Lankester describe the relation between the reproductive cells and those of the soma in still more striking terms. The latter says: "Among the multicellular animals, certain cells are separated from the rest of the constituent units of the body, as egg-cells and sperm-cells; these conjugate and continue to live, whilst the remaining cells, the mere carriers as it were of the immortal reproductive cells, die and disintegrate. The bodies of the higher animals which die may from this point of view be regarded as something temporary and non-essential, destined merely to carry for a time, to nurse and to nourish the more important and deathless fission products of the unicellular egg."

Whatever views we may hold as to details I question whether this philosophical statement is open to contradiction. The function of reproduction in all its preparations and performances commences in the early stages of segmentation, and may be said to continue in man until the care of the offspring is completed. In many insects, male and female, the act of reproduction is also the cause of death.

Evolution and the pressing necessities of individual life have led men to look upon the function of reproduction as of vastly inferior importance to their own individual metabolism. No doubt women will soon come to think so too, for they seem to be changing. Whether this change be due to an increasing hyperplasia of the female suprarenal cortex I do not know. But just as we are beginning to think that our knowledge of their special functions is becoming well defined they invite us to follow their further evolution, which apparently they think will not involve them in the joys of motherhood.

Helmont said: "Propter *solum uterum* mulier est quod est." Chévau changed this to "Propter *ovarium solum* mulier est quod est." Virchow reiterated this statement and, according to Biedl, added that "all the peculiarities of her body and mind ..... everything, in fact, which in the true woman we admire and revere as womanly, is dependent on the ovary."

In the light of our present knowledge I venture to think that the following aphorism most accurately represents the cause and effect: "Propter *secretiones internas totas* mulier est quod est."

The original work detailed in these lectures, which were illustrated with many photomicrographs and colour photomicrographs, was carried out in the Bio-chemical and Pathological Laboratories in the University of Liverpool; and I am much indebted to Professor Benjamin Moore and Professor Ernest Glynn for help in various directions, and especially for the facilities accorded to my assistants, and for the superintendence of their work.

The entire expenses were defrayed out of the J. Arthur Smith Research Fund.

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FOREIGN UNIVERSITY INTELLIGENCE.

Boston (Harvard): Dr. A. Lugard, assistant in the University Medical Clinic, Vienna, has been offered a Professorship of Radiology.—*Cologne:* Dr. Eduard Meder, *docent* of social medicine, has been granted the title of Professor.—*Erlangen:* Dr. W. Lobenhoffer has been recognised as *privat-docent* of Surgery.—*Freiburg:* Dr. Nöggerath, of Berlin, has been offered the chair of Children's Diseases, in succession to Dr. Salge, and Dr. J. Oehler has been recognised as *privat-docent* of Surgery.—*Giessen:* Dr. W. Sulze has been recognised as *privat-docent* of Physiology.—*Göttingen:* Dr. Curt Oehme has been recognised as *privat-docent* of Medicine, and Dr. Dr. Ulrich Ebbecke as *privat-docent* of Physiology.—*Heidelberg:* Dr. Karl Beck has been recognised as *privat-docent* of Laryngology and Otology, and Dr. Hans W. Gruhle as *privat-docent* of Psychology.—*Königsberg:* Dr. Henke has been recognised as *privat-docent* of Laryngology and Rhinology.—*Leipsic:* Dr. Thiemich, of Magdeburg, has been appointed to the chair of Pædiatry, in succession to the late Dr. Soltmann, and Dr. Bernhard Schweitzer has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Marburg:* Dr. Kleinschmidt has been recognised as *privat-docent* of Children's Diseases, and Dr. Friedrich Kierstein as *privat-docent* of Gynæcology.—*Munich:* Dr. Alwin Ach has been recognised as *privat-docent* of Surgery, Dr. G. Böhm as *privat-docent* of Medicine, and Dr. Hans Ahrens as *privat-docent* of Odontology.—*Rome:* Dr. Sebastino Gussio has been recognised as *privat-docent* of External Pathology, and Dr. Ernesto Tramonti as *privat-docent* of Neurology.—*Sienna:* Dr. Amilcare Bietti has been promoted to Extraordinary Professor of Ophthalmology.—*Strasburg:* Dr. Karl Pfersdorff, *privat-docent* of psychology, Dr. Julius Baer, *privat-docent* of medicine, and Dr. Walter Berg, *privat-docent* of anatomy, have been granted the title of Professor.—*Zürich:* Dr. Max Tièche has been recognised as *privat-docent* of Dermatology and Venereal Diseases.

The Lumleian Lectures
ON
INTRATHORACIC ANEURYSM.

Delivered before the Royal College of Physicians of London on March 6th, 11th, and 13th, 1913,

BY F. DE HAVILLAND HALL, M.D. LOND., F.R.C.P. LOND.,
CONSULTING PHYSICIAN TO THE WESTMINSTER HOSPITAL.

LECTURE III.*

Delivered on March 13th.

MR. PRESIDENT, FELLOWS AND GENTLEMEN,—The *prognosis* in intrathoracic aneurysm must always be a most anxious one. I would hardly like to say that a complete cure is impossible, but with one or two doubtful exceptions—I say doubtful, because the cases were observed before the X ray method of examination was introduced—I have not seen a case which I could consider a permanent cure.

Treatment by rest and other measures will usually remove pain and other unpleasant symptoms, and cause a great modification in the physical signs; but, as is often shown by the post-mortem examination, while the original aneurysm has become consolidated, another aneurysm has developed, and this, which frequently escapes recognition, may be the cause of death. As might have been expected, an aneurysm progresses less quickly in people who can lead a quiet life and who are of a placid disposition. It has been stated that aneurysms run a more rapid course in women than in men, but I have not been able to verify this statement. The presence of aortic regurgitation is a very unfavourable sign, as is also advanced degeneration of the blood-vessels.

To show the frequency of sudden death in aneurysm I may quote Dr. Kelynack's statistics; out of 32 cases of rupture reported by him six were observed in medico-legal investigations, the subjects beings brought dead to the hospital. Six of my 35 private patients died suddenly, in addition to 6 who died from rupture of the aneurysm, 4 of whom are definitely stated to have died suddenly, and possibly the other 2 also may have died suddenly.

The duration of life after the recognition of an intrathoracic aneurysm is, in my experience, usually limited to less than 4 years, though in very exceptional cases life may be prolonged for 6 or 7 years.

I have carefully investigated the notes of 35 cases of aneurysm I have met with in private practice. Excluding all doubtful cases and cases in which I have not been able to trace the final result, and excluding also a patient who was alive 10 years after I had made a diagnosis of aneurysm, I find that the average duration of life in 27 cases works out to a little over 2 years and 8 months. There are 2 cases in which death apparently occurred nine months after the appearance of symptoms suggestive of aneurysm, and 1 case in which death was delayed for seven years. Owing to the extreme difficulty which often presents itself in fixing the exact date of the onset of symptoms, I feel convinced that my figures underestimate the duration of life, and I think that about three years would be nearer the mark. In some cases the symptoms of the aneurysm started so definitely after a well-recognised strain that one can be quite sure as to the duration. In one patient who was under my observation nearly the whole time the strain occurred four and a half years before death.

All my 27 cases occurred, as I have already stated, in my private practice; they were almost all of them sufficiently well endowed with this world's goods to be able to take care of themselves, as in every case they had been warned of their condition; and as all the cases had been submitted to treatment more or less carefully carried out, it was to be expected that they would last longer than hospital patients, who generally have to resume work when quite unfit for any active exertion.

* Lectures I. and II. were published in THE LANCET of March 22nd (p. 803) and 29th (p. 869), 1913, respectively.

Sir William Osler[1] states that "the average duration after discovery is from 18 months to 2 years," but he does not mention from what class of patients his statistics are derived.

A case I showed at the Medical Society[2] in April, 1911, illustrates the slow progress of some cases. The patient was a man of 43 years of age, a wire-drawer. He was originally admitted into Westminster Hospital under my care in July, 1905, placed on low diet, kept at absolute rest, and given iodide of potassium in moderate doses. He improved greatly under treatment, but has taken iodide off and on ever since. He was able to continue at work—fairly laborious—the whole time. In March, 1910, he had a slight attack of hæmoptysis. When shown to the society the physical signs of an aneurysm of the first part of the arch of the aorta were very distinct.

A somewhat similar case is recorded by Dr. Gibson.[3] The patient was a man, 39 years of age, whose occupation involved a very considerable amount of physical exertion, who lived for 12 years after the diagnosis of an aneurysm of the ascending portion of the arch of the aorta, and who died eventually from heart failure. On two occasions he was an in-patient, and was treated by means of absolute rest, restricted diet, and iodide of potassium.

The most remarkable instance of the preservation of life under threatening conditions which I have come across is a case reported by Dr. T. R. C. Whipham.[4] A man, 40 years of age, was admitted into hospital with a rounded tumour in the first and second right interspaces, the skin over it being tense and discoloured. He was under observation for full 15 years, and during the whole of that time he had a large external tumour, though the aneurysm had probably existed a year or so longer. With the exception of about 18 months spent in hospital the patient was able to carry on his occupation of builder's foreman. Death occurred from external rupture of the sac.

These three cases afford good examples of the great difficulty which often attends the prognosis in cases of aneurysm.

LIFE ASSURANCE.

My experience in life assurance has taught me that thoracic aneurysms are not infrequently overlooked, and that consequently they represent one of the causes of early death after assurance.

In a paper I read before the Life Assurance Medical Officers' Association in 1907[5] on Statistics of the Rock Life Assurance Company I made the following remarks:—

> There were 6 deaths from aneurysm of the thoracic aorta and 1 from aneurysm of the abdominal aorta. In addition to these cases there were 3 deaths recorded from rupture of the aorta—these were probably due to aneurysm. Two of the claims due to death from aneurysm of the thoracic aorta occurred after only two premiums had been paid. One of these was for a policy of £10,000. The deaths occurred at the ages of 47 and 51 respectively. These two cases illustrate the difficulty of the recognition of aneurysm of the aorta, as from what we know of the clinical history of this disease aneurysm was almost certainly present at the time of the examination, death only very rarely occurring within two years from the development of symptoms and physical signs of the disease. All physicians with large clinical experience will know how difficult is the diagnosis of an aneurysm, even when one has the aid of the patient in mentioning symptoms. It is in these doubtful cases that the Roentgen rays are so useful in clearing up the obscurity of the diagnosis, but it is a counsel of perfection to expect that the X rays should be employed in examination for life assurance.
>
> Taking the 10 cases of aneurysm and rupture of the aorta together, the average age at entry was 51·5 years, with an average duration of life of 16 years, the expectation being 19·28 years, so that the aneurysm cases were very unfavourable from a pecuniary point of view. I would therefore urge the importance of carefully investigating any man of 40 years and upwards in whom there is a ringing second sound in the aortic area.

These remarks, made five years ago, are in accord with my present views on the subject.

MEDICAL TREATMENT.

While I was attending the practice of St. Bartholomew's Hospital I was much impressed by the teaching of the late Dr. James Andrew, whose great diagnostic skill and general excellence as a physician were universally admitted by all who had the privilege of working with him in the wards of the hospital. He was particularly keen on the recognition and treatment of intrathoracic aneurysm.

Tufnell's Method of Treatment.

Dr. Andrew was one of the first in London to adopt

Tufnell's plan of treatment, of which he thought highly, as the following remarks show:—

> But although the instances of complete consolidation must always be few, those in which relief from distress and an increase in the strength of the walls of the sac are obtained are very numerous.[6]

He insisted on the observance of the following rules as being of the utmost importance:—

> Place the patient at once upon the minimum diet, and forbid even the slightest movement which can be avoided.
> The room in which he lies must be as quiet and secluded as possible.
> No treatment by drugs is to be attempted at the same time.
> Listen to no complaints of thirst so long as the pulse and temperature are normal, or nearly so, and the whole allowance of solid food is consumed.[7]

These are most admirable rules, and time has only confirmed their utility. But before mentioning additional rules I must direct attention to his third rule—i.e., that in reference to the use of drugs. This, I believe, refers almost solely to the use of iodide of potassium. Increasing experience in the treatment of aneurysm has brought home to me that Dr. Andrew was right in advising that iodide of potassium should not be given while the patient is undergoing the Tufnell treatment, because the iodide so increases thirst that it is impossible to limit the amount of fluid as laid down by Tufnell. This rule has no reference to the occasional use of drugs, such as aperients for the constipation, which the dry diet almost inevitably produces, or of opiates for the relief of pain.

As regards the diet to be employed I cannot do better than quote Tufnell's[8] directions, which are as follows:—

> The diet, under ordinary circumstances, must be confined to three meals served at regular intervals, and restricted to the following in kind and amount—viz., for breakfast, two ounces of white bread-and-butter, with two ounces of cocoa or milk. For dinner, three ounces of broiled or boiled meat, with three ounces of potatoes or bread, and four ounces of water or light claret. For supper, two ounces of bread and butter, and two ounces of milk or tea, making in the aggregate ten ounces of solid and eight ounces of fluid food in the 24 hours, *and no more.*

He adds in a footnote:—

> In some irritable constitutions this restriction in diet will be irksome, and the patient becomes intolerant and restless. Here, instead of attempting to persist in the withholding of food, the appetite should be indulged *to the satisfying of the patient* (so as to keep him tranquil), *but no more.*

In practice it will be found that very few will, or indeed can, put up with so rigid a diet as Tufnell laid down, and I have found that it has been almost always necessary to increase the fluid to 12 or even 16 ounces in the 24 hours—I have usually found that 12 ounces of solids were sufficient to satisfy the patient.

After having settled the diet, there comes the very important question of the duration of the treatment. According to Tufnell two months or ten weeks at least are necessary, and during this time the patient should be kept absolutely at rest. When I have proposed, either to hospital or private patients, that they should undergo this method of treatment, I have considered it my duty to put plainly before them that they must submit to at least six months' complete rest, with a very restricted diet for the first six or eight weeks. After this period I have generally considered it desirable to relax somewhat the restrictions as to diet, though still most careful to maintain absolute rest of body during the remaining four months of treatment.

One of the most important factors for success, if not the most important, is the due selection of the patient. In the first place, he should be of a quiet, placid temperament. Two of the cases I had in private illustrate the difference of behaviour in this respect. One, a man aged 37 years, went through an eight months' course quite cheerfully and happily, and was easily amused by trifles. The second case was a man aged 55 years, in other ways a good subject for the treatment, but his restlessness and irritability were so great that I had to advise that the treatment should be discontinued after a trial of three weeks. Then the social position of the patient has to be considered. I think that it is almost cruel to put a working man to the strain and discomfort involved in this method of treatment if at the end he must return to hard manual labour, whereas a person whose occupation is of a sedentary nature might be offered the chance of cure. Patients under 55 years do better than older patients. Men who have drunk freely, who have very degenerate vessels or with a syphilitic history are not good subjects for the treatment. On the other hand, the history of a distinct strain or injury as the cause of the aneurysm is a favourable indication.

The "aneurysm of physical signs"—i.e., the aneurysm springing from the first part of the arch of the aorta—is more suitable for this treatment than the "aneurysm of symptoms." It is recognised earlier, and the progress of the case can be watched in a more satisfactory manner. In aneurysm affecting the transverse arch of the aorta, where there is pressure upon the trachea or œsophagus, prolonged rest in bed in the recumbent position is usually not well borne, and may have a prejudicial effect; even rupture with a fatal hæmorrhage may result. A saccular aneurysm, with a comparatively small opening from the aorta into the sac, is the most suitable kind for treatment. This usually implies that the aneurysm has existed some little time, so that the sac has become larger in proportion to the opening. A fusiform aneurysm does no good under Tufnell's treatment.

The presence of aortic regurgitation puts the treatment out of court. In the first place, the quickness with which the aorta is emptied prevents the slowing of the circulation in the sac, which is essential if coagulation is to take place, and secondly, as in thoracic aneurysm with aortic regurgitation death commonly occurs from heart failure, it is very important that nothing should be done which would tend to check the conservative hypertrophy of the left ventricle.

Constipation is generally a trouble. This may be remedied by calomel in combination with colocynth and hyoscyamus, or by cascara sagrada, or by a glycerine or olive-oil enema. As I have already mentioned, pain may require the exhibition of morphine. Sleeplessness is frequently present. A small dose of chloral (10 grains) or chloralamide (20 grains) with or without bromide of potassium may be given. Sulphonal or trional I have also found useful. Veronal I have avoided since I came across cases in which comparatively small doses have had untoward results.

For palpitation and increased frequency of the pulse I have ordered tincture of aconite and tincture of strophanthus. But as far as possible the less drugs the patient has the better he will stand the treatment, the explanation possibly being that the cases which respond best to the treatment do not require any assistance from medicines.

When the rigid confinement to bed ceases the patient should be allowed to return to a more normal state only very gradually. He should first be allowed to sit up in bed; after he has done this for three or four days, he may be placed on the side of the bed and his legs allowed to hang down. After he has accustomed his circulation to this change of position for a day or two, he may be assisted out of bed on to a couch, then into an armchair, and finally he may be allowed to walk. During these various experiments attention should be paid to the pulse, and if its frequency be much increased the patient's progress as regards movement must be checked for a time.

As regards the result of the Tufnell treatment, I do not think that we have advanced much further than the position taken up by Dr. Vincent Harris[9] upwards of 30 years ago, who sums up a very able paper on the subject by saying that "although there was almost certain relief of symptoms the cures were rather rare."

Based upon an entirely different principle to Tufnell's plan of treatment is that recommended by Dr. Besly Thorne,[10] which he describes as follows:—

> The treatment by mineral baths, liberal diet, and free water drinking is directed towards the increase of arterial lumen and the diminution of peripheral resistance, with free elimination of uric acid and other blood toxins, and consequent diminution of hydrostatic pressure on the walls of the aneurysmal sac, arrest of degenerative processes, and repair of the cardio-vascular tissues.

He also advocates "regulated walking exercise taken twice daily." This line of treatment is naturally only applicable in the very early stage of aneurysm.

The Iodide Treatment.

I suppose that in no disease, excepting, of course, tertiary syphilis, has iodide of potassium been more employed and given in larger doses than in aneurysm, and most authorities are agreed that the immediate effect of its administration is often very striking, but I have yet to be convinced that iodide of potassium is capable of curing an aneurysm. Moreover, it is difficult to separate the effect of the iodide from the rest, which usually has been enjoined at the same time. The excellent result following the use of this drug must have been noticed by all hospital physicians. Under its

influence the pulsation in the tumour may be seen to lessen, and eventually to cease entirely; cough and dysphagia are no longer troublesome; the agonising pain, which previously had kept the patient awake, disappears as though by a charm, and frequently in the course of two or three weeks' treatment the patient feels so much better that he is anxious to leave the hospital. The after-history, however, is usually that the improvement lasted some months—indeed, in some cases upwards of a year; but sooner or later there is a return of the old symptoms, and eventually death from rupture of the aneurysm or gradual exhaustion.

Of all the symptoms produced by aneurysm pain is the one upon which iodide appears to exercise its greatest effect. Some patients as long as they take the salt are free from pain; omit it and the pain returns. This holds good not only for patients in bed, in whom the rest may have a great deal to do with the cessation of pain, but it also applies to patients who are walking about.

Iodide of potassium was at first employed more or less empirically, but when its favourable action came to be recognised attempts were made to explain its action. The first explanation propounded was that the cases in which it succeeded were of a syphilitic nature, and that therefore its virtues were due to its anti-syphilitic properties; but, as Dr. Balfour has pointed out, this has only made its action still more mysterious. He has strongly advocated the theory that iodide of potassium owes its curative virtue in aneursym to its power of lowering the blood tension. He has pointed out that large doses are not necessary and are sometimes injurious, and by large doses he means doses over 20 grains. He believes that the failures in the use of this drug, which were generally accompanied by an unduly quickened cardiac action, were most likely dependent on too great a lowering of the blood pressure; because this would not only account for the excited action of the heart, which had an unfavourable influence upon the aneurysm, but would also permit the blood to flow away too rapidly to provide for the due nutrition of the tissues.

Dr. Balfour regards the cure of an aneurysm as depending upon the hypertrophy of its coats, "which cannot be effected without a certain amount of blood pressure, neither can it occur if the blood pressure remains at normal, for all experience teaches us that the effect is then one of gradual though slow dilatation, with pressure corrosion of all the surrounding tissues." He continues:—

> Hit the happy mean, and the effect is that the arterial coats behave like a hollow muscle, which hypertrophies when opposed to an obstacle with which it is able successfully to cope. To hit this happy mean and ascertain the proper dose the patient is put to bed without any other treatment, and his pulse-rate ascertained night and morning for a few days. So soon as his average pulse-rate in recumbency is ascertained he is put upon 10-grain doses of iodide of potassium every eight hours. If the pulse-rate remains unchanged the dose is increased to 15 grains every eight hours, and every week an increase of 5 grains each dose is made till the pulse-rate begins to rise. In this way it has been ascertained that 15 grains to a dose is seldom able to be exceeded, while it has often happened that 10 grains has been found to be the most advantageous quantity.

Dr. Balfour further points out that with a proper dose a marked improvement can generally be effected in three months instead of six months, the usual time before accurate dosage was resorted to. He first enunciated these views in 1876,[11] so that the main credit of establishing the iodide of potassium treatment on a firm basis must be assigned to him.

As I have already stated, the diet of patients on the iodide of potassium treatment should not be much curtailed, they do better with a fairly liberal allowance of food, and it is quite impossible, even if desirable, to limit the amount of fluid, as the salt causes great thirst in some people, and iodism may be produced unless a fair supply of liquid be taken. At first the patient should be kept in the recumbent position; as a rule two or three months will suffice; after this period the patient may be allowed up on the sofa for a few hours daily and by degrees he may take gentle exercise. From the patient's point of view there can be no doubt that the iodide of potassium plan of treatment is infinitely preferable to the Tufnell system. What we want are some definite statistics as to the comparative advantages of these two methods of treatment, and unfortunately at present there are none available. Of one thing in regard to these two plans of treatment I feel certain, that it is unwise to attempt to combine them. If the Tufnell plan of treatment be adopted do not give drugs. If it be decided to try Balfour's method of giving iodide of potassium, do not limit rigidly the amount of solid and liquid nourishment, otherwise I am afraid that the patient will fall between two stools.

The excellent effect which commonly attends the administration of iodide of potassium would seem to point to the possibility of a syphilitic element in the case, and to indicate the desirability of the Wassermann reaction being tried in every case of aneurysm. If a positive reaction be obtained a vigorous antisyphilitic treatment should be instituted, but it is not advisable to employ salvarsan.

The Gelatine Treatment.

The gelatine plan of treatment was introduced by M. Lancereaux, and at a meeting of the Academy of Medicine in Paris in July, 1904, he stated that among 1000 injections of solution of gelatine he had not observed any mishaps. The solution he advises consists of 25 parts of gelatine and 7 parts of chloride of sodium dissolved in 1000 parts of water. He injects 200 grammes at a time, and the process is repeated every four or five days. If the gelatine be of good quality and thoroughly sterilised at a high temperature M. Lancereaux maintains that the treatment is in no way dangerous, and has yielded very favourable results.

Two years later (July, 1906), in a paper communicated to the Académie de Médecine,[12] M. Lancereaux stated that about 1200 injections had been made by himself and his assistants without the occurrence of a single case of tetanus. He maintains that the efficacy of this method of treatment is indisputable, and he points to the relief of pain which follows after four or five injections as a proof of this. In every case of aortic aneurysm perforating the sternum, covered only by thin and stretched skin, which he has treated he has noted commencing contraction of the tumours after 10 injections, and total induration after from 30 to 40 injections. M. Lancereaux goes on to say that these good results cannot be attributed solely to rest in bed, as he has watched cases in which patients kept for long periods in bed obtained no benefit from treatment until they received injections of gelatine, and he has had other cases in which after the injections the aneurysmal tumours contracted, notwithstanding the absence of complete rest.

In contrast to this optimistic view of the introducer of the gelatine treatment I would cite Sir James Kingston Fowler's experience at the Middlesex Hospital.[13] Twelve cases of aneurysm were treated by subcutaneous injection of gelatine, and he did not consider that this series of cases established a superiority of the gelatine method over the treatment by rest and diet, combined with the administration of iodide of potassium. In one of the 12 cases, however, a strikingly superior result was obtained, and there was no doubt as to the complete cure of an innominate aneurysm in a man aged 38.

Dr. Guthrie Rankin, who has employed the treatment at the Seamen's Hospital, where aneurysms are of frequent occurrence, writes to me as follows:—

> The general impression the treatment leaves in my mind is that it is very useful and palliative, that in some cases it almost produces cure, and that if careful methods are adopted in its preparation there evidently no risk of evil consequences. One striking fact about its use is the rapid relief which it affords to the pain of aneurysm; of this I am quite sure.

The apparatus employed consists of a glass flask with a vulcanised rubber cork through which pass two tubes, one reaching nearly to the bottom of the flask and the other just projecting beyond the cork. To the former is connected an indiarubber tube attached to a hollow platinum needle, with which the puncture is made. The shorter glass tube is connected with a pump, and in it is a bulb containing cotton-wool to filter the air as it is driven into the flask. Everything must be carefully sterilised, and the gelatine is kept fluid by the flask being placed in a warm-water bath. The skin over the buttock is then rendered aseptic, and the injecting needle is plunged deeply into the muscle of the buttock. The injection is made slowly, about a quarter of an hour being occupied in the process. After the injection the patient should be kept at rest. Sir James Kingston Fowler begins with 50 c.c. of a 2 per cent. solution and gradually increases the amount to 100 c.c. and 4 per cent. respectively, although as much as 250 c.c. of a 2 per

cent. solution may be used at first without unfavourable symptoms. Occasionally the injection is followed by smart reaction, the patient may have a rigor, and his temperature may rise to 103° or 104° F. Though very alarming at the time no evil may result from it. When this plan of treatment was first introduced into this country two deaths from tetanus occurred, but if the gelatine be carefully sterilised, and strict aseptic precautions be taken in carrying out the injection, the risk of tetanus may be regarded as *nil*.

As regards the results obtained by the gelatine plan of treatment, it may be said that though benefit has resulted in a considerable number of cases, it has not justified the claims that were made on its behalf when it was first introduced, as there is no definite evidence of the cure of a thoracic aneurysm by this means. The two classes of cases in which its employment seems particularly indicated are cases in which an aneurysm has perforated the chest, and in which there is a danger of external rupture, and cases in which there is great pain.

The calcium salts, such as the chloride and lactate, have been employed in the hope that they would favour coagulation of the blood in the sac, but I have not been able to discover any evidence that they have a beneficial action—with the exception of a case mentioned by Dr. Oswald Browne in the discussion on Aneurysm at the Medical Society of London in 1900.

Expectant and Symptomatic Treatment.

Lastly, there comes the purely expectant and symptomatic method of treatment. Some physicians are altogether opposed to the rest cure; they maintain that patients who are subjected to it are worse at the end of the treatment than when it was started, because their tissues had degenerated during their passive existence, and that they were consequently less able to resist disease.

Confinement to bed on a very spare diet has a most depressing effect upon some people, and therefore the cases which are to be submitted to this line of treatment should be selected with the greatest care, as I have already pointed out, not only in regard to the physical state, but also as regards the mental condition. To say that a patient with an aneurysm leaves the hospital, after a rest cure with a modified Tufnell diet, in a worse case than on admission, is not in accord with my experience, now extending over more than 40 years. Still, there are quite a number of patients with intrathoracic aneurysm who do better physically, and certainly mentally, if they are allowed to pursue their ordinary avocations, provided their work be not too strenuous for body or mind. We all must have met men who, when their grave condition has been clearly placed before them, have elected to continue their life work at all risks, and I am bound to say that my sympathy is with them, and that I myself would, under similar circumstances, feel inclined to follow their example.

In the event of a patient deciding to lead his ordinary life, he should be cautioned to take things as easily as possible, to avoid all great exertion, especially of a sudden nature, to eat with great moderation, and, as a general rule, to avoid alcohol. Tobacco may be indulged in with moderation, and by moderation I mean a quantity of tobacco not exceeding three ounces per week.

Medicinally, I have no doubt that these patients are benefited by iodide of potassium, especially if the blood pressure be high. I usually order from 5 to 10 grains with 15 to 20 minims of aromatic spirit of ammonia in chloroform water to be taken three times a day after food. This will often suffice to keep them comfortable.

For the relief of the agonising pain that is sometimes experienced in aneurysm no remedy has a more remarkable effect than bleeding. Dr. Pye-Smith's [14] experience on this point is decisive. He writes as follows:—

> I shall never forget the case of a man who for more than a week had not been able to lie down or enjoy more than broken and uninterrupted (*sic*) sleep. I found him the day after his admission to the hospital sitting up in bed, exhausted by want of rest and continually dropping asleep, but wakened again by the terrible pain he endured. The house physician had given him morphia in full doses without any benefit. He was bled from the arm to 6 oz., and before the blood ceased flowing expressed the relief he felt, and had fallen fast asleep on his pillow before the arm was bound up. His distress was never suffered to reach so advanced a point, and again and again on its return he was relieved by a similar or a still smaller abstraction of blood.

One such case is quite sufficient to prove the utility of venesection for the relief of the awful pain occasionally suffered by the victims of aneurysm. Venesection is to be preferred to leeches in these cases, as the relief experienced is more rapid and complete.

The application of an ice-bag suspended from above so as to avoid too much pressure upon the tumour will often have a beneficial result upon the pain.

For the relief of the anginal attacks met with in aneurysm iodide of potassium in 10 to 20 grain doses three times daily will usually effect much good. In cases where the iodide fails liquor arsenicalis in 5 minim doses three times a day will sometimes be found useful. For the acute anginal attacks the inhalation of nitrite of amyl, followed up by the internal administration of trinitine, is generally efficacious. Erythrol tetranitrate, in ¼ to ½ grain doses, may be given instead of trinitine, especially if the duration of the attacks be protracted. But in many cases there comes a time when the only drug to give relief is morphine subcutaneously. I prefer to give it in combination with atropine. I am of opinion that the atropine counteracts some of the injurious effects of the morphine and prolongs its action.

For the treatment of dyspnœa, especially when accompanied by lividity, there is no remedy which can be compared to the abstraction of blood. The blood may be removed either by venesection or by the application of leeches. The over-distended condition of the right heart is often greatly benefited by loss of blood, when there is pressure on the veins causing great venous engorgement.

Should an aneurysmal tumour on the surface of the chest begin to weep and ooze, the best application is styptic lint, kept in position by a broad piece of strapping, but, of course, this can only temporarily check the tendency to rupture.

TRACHEOTOMY.

There is one question in regard to treatment which occasionally presents itself in a most dramatic form—viz., whether tracheotomy should be performed for the relief of paroxysmal and urgent dyspnœa?

In this connexion the older Fellows of the College will doubtless recall the case of the Earl of St. Maur. This case occurred before the laryngoscope was commonly employed in this country, but what Dr. C. J. B. Williams [15] wrote upwards of 40 years ago is still true to-day. After speaking of the life-saving effect of tracheotomy in cases of laryngeal obstruction, he goes on to say:—

> It is different with the dyspnœa caused by *intrathoracic tumours*. These produce not only *laryngeal* dyspnœa by pressure on the recurrent nerves which regulate the motions of the glottis, but also *tracheal* dyspnœa by direct pressure on the lower part of the windpipe itself. Whatever difficulty of breathing may be due to the pressure on the nerves going to the larynx may be relieved by the operation for a time; but that proceeding from direct pressure on the windpipe is beyond the reach of that or any operation, and if this direct pressure exist to any great degree it would render the operation fruitless. Further, it must be borne in mind that aneurysm, the commonest kind of intrathoracic tumour, may cause death by rupture and loss of blood, and in other ways besides by suffocation, and therefore that in such a case tracheotomy cannot be regarded in the light of a curative measure. Its power to give temporary relief will depend on how much the difficulty of breathing caused by the aneurysm is *laryngeal*, from pressure on the recurrent nerves only, and not *tracheal or bronchial*, from pressure on the windpipe or one of its branches. When there is time and opportunity for careful examination, these distinctions may be made from the character of the physical signs, so as to determine beforehand whether the operation is likely to be beneficial or not.

I have ventured to quote at length the wise remarks of Dr. Williams, and which, though written in the pre-laryngoscopic days, still in the main hold good.

In the discussion at the Medical Society in 1900,[16] on the Diagnosis and Treatment of Intrathoracic Aneurysm, I propounded the question "For what conditions should tracheotomy be advised in cases of aneurysm of the arch of the aorta?" As my contribution to the discussion I then said:—

> From what I have seen myself, and from what I have gathered from the literature of the subject, I am of opinion that it is but rarely that tracheotomy is likely to be of service in aortic aneurysm. The chief obstruction to the breathing is due to direct pressure on the trachea, even in those cases in which there is spasm of the adductors or paralysis of the abductors of the cords.

I also mentioned two cases in which I had been called in at the last moment, and in both I had decided that tracheotomy would not give relief. Both these patients died the day after I saw them, and at the necropsy there was found to be direct pressure on the trachea, and this was evidently the cause of the dyspnœa.

Sir William Broadbent, in the course of this discussion, said that "he had seen tracheotomy done, but without influence on the symptoms." On the same occasion Sir James Kingston Fowler mentioned the case of a man who had bilateral abductor paralysis from pressure of an aneurysm, and as a result suffered from most severe paroxysmal attacks of dyspnœa. Tracheotomy was performed between the attacks, and the patient, who had had no sleep for two and a half days, went to sleep immediately after the operation, and slept for nearly 24 hours continuously.

Of course, there can be no doubt that if the dyspnœa be due to spasm of the adductors or paralysis of the abductors, then tracheotomy will be an immense relief to the patient; on the other hand, tracheotomy is useless in cases of direct pressure on the trachea. But it is in cases of a combination of these two conditions—i.e., where there is a double stenosis of the air passage, due to bilateral paralysis of the abductors and direct pressure on the trachea—that the great difficulty as to the advisability of tracheotomy arises. In these cases the respiratory excursions of the larynx will help in deciding. In two cases in which I was called in, at the last moment, to decide whether tracheotomy should be performed I decided in the negative on account of the absence of respiratory excursions of the larynx. Where the obstruction is at the glottis there is an up-and-down movement of the larynx; but where the obstruction is in the trachea this is absent. I think that the correct attitude to assume in these cases of double stenosis is to advise operative interference in the hope that the laryngeal condition is the chief cause of the dyspnœa. In this event the tracheotomy will add much to the patient's comfort. If, on the other hand, the pressure on the trachea be the principal cause of the trouble, then tracheotomy will be practically useless, as it was in the case of Earl St. Maur, but the operation would add but little to the patient's distress.

The possibility of passing a stiff rubber tube down the trachea, beyond the obstruction, should be borne in mind—an early example of this procedure is afforded by a case recorded by Sir J. R. Bennett.[17] The patient was a man under Mr. Bryant's care at Guy's Hospital with a goitrous-like tumour pressing on the trachea. Tracheotomy was performed, but no air passed out of the chest. A long perforated tube was then introduced through the cannula into the bronchus, when a rush of air immediately followed and was succeeded by natural respiration.

My present attitude towards tracheotomy is in favour of the performance of the operation in doubtful cases. The patient may receive only temporary benefit, but we substitute a quiet death for one attended with great suffering. To avoid the unpleasant sequel of Earl St. Maur's case the physician should clearly lay before the patient's friends the state of affairs, pointing out that tracheotomy offered a prospect of relief, but that it might only be very partial should there be any mechanical pressure obstructing the trachea at a lower level.

Before resorting to tracheotomy in cases of paroxysmal dyspnœa the administration of chloroform might well be tried. If it relieved the patient operative interference would be uncalled for; but if not, then the operation could be carried out all the easier for the anæsthesia, and artificial respiration resorted to if necessary. Even after the performance of tracheotomy the administration of chloroform may be necessary to relieve the spasmodic attacks of dyspnœa due to irritation of the vagi.

SURGICAL TREATMENT.

The surgical treatment of intrathoracic aneurysm may be considered under five heads: (1) the ligature of the great vessels arising from the innominate artery or arch of the aorta; (2) the passing of wire—filipuncture—into the aneurysmal sac, with or without the passage of a galvanic current through the wire; (3) galvano-puncture; (4) Macewen's method of needling; and (5) the ligature of the neck of the aneurysmal sac.

Ligature of Vessels.

The treatment of thoracic aneurysm by ligature of vessels is not a subject on which I have much personal experience. Even among surgeons there is considerable difference of opinion as to the advisability of the operation. In a case of aneurysm of the arch, in which Mr. Christopher Heath[18] tied the left common carotid, he maintained that the aneurysm was practically cured at the time of death, and that the fatal termination of the case was due to the pressure effects of the consolidated tumour. At the meeting of the Clinical Society when this case was discussed Mr. Howard Marsh mentioned that in one case in which he tied the right common carotid and subclavian arteries for aneurysm of the arch, it appeared that the operation made the patient worse instead of better, for the sac rapidly enlarged. On the other hand, Mr. Holmes, in his lectures delivered before the Royal College of Surgeons of England in 1872, mentioned 7 cases in which the left carotid was tied for aneurysm of the arch; 4 of these cases were successful, and all except one derived benefit from the operation.

The chief indication for the ligature of the carotid and subclavian vessels is pain, while aortic regurgitation and degeneration of the arteries are unfavourable to operation.

Most physicians will agree with Mr. Christopher Heath's[19] summing up of the 6 cases in which he tied the left carotid.

> The results, taken as a whole, are perhaps not very encouraging, but it must be borne in mind that in dealing with a practically insurable disease, a prolongation of life for even a few months may be worth attempting.

Introduction of Wire into Aneurysmal Sac.

The introduction of wire into the sac of an aneurysm—Moore's method[20]—has received from M. Verneuil the name of "filipuncture." Though this operation has been attended with very unsatisfactory results in aneurysm of the arch of the aorta, it has been more successful in abdominal aneurysm. I have seen only one case in which this treatment has been carried out. The patient was under the care of my colleague, Sir Bryan Donkin.[21] Mr. Macnamara passed a yard of silver wire into the sac through a curved tubular needle. The man died six days after the operation. In 1887 Sir Alfred Pearce Gould[22] operated on a patient of Dr. W. H. White. The case terminated fatally on the sixth day from sloughing of the tissues. In his report on this case Sir Alfred Pearce Gould mentioned six other cases of aortic aneurysm which had been treated by the introduction of watch-spring or steel wire. All the cases ended fatally, but in one there was temporary improvement.

Until the year 1903 the method of wiring was unscientific and was carried out with comparative disregard of aseptic principles. In this year Mr. G. H. Colt invented an instrument for the rapid introduction of a known quantity of sterilised wire into an aneurysm, with a minimum of disturbance. He has described and figured an improved instrument (No. 3).[23]

Dr. Dawson Turner's[24] experiments would suggest that surgeons should employ zinc wire for introduction into the aneurysm, which they intended to treat by electrolysis rather than silver or other kinds of wire, a larger and a firmer precipitate being deposited by this means.

A full account of the results of the method of treatment by wiring, with or without electrolysis, will be found in the discussion which took place at the Surgical Section of the Royal Society of Medicine in May last. Mr. d'Arcy Power's[25] conclusions at this discussion are so much to the point that I will quote them *in extenso*:—

> The chief indications for the operation of wiring are: 1. An aneurysm of the ascending part of the arch of the aorta, especially if X ray examination in two planes at right angles to each other indicate sacculation. 2. Abdominal aneurysm in the usual situation—namely, at the origin of the cœliac axis. Both these types of aneurysm are usually saccular, and the louder the bruit the greater is the chance of a case being a suitable one for wiring, because the aneurysm is probably saccular and the opening of the sac small. Medical treatment is of no avail. [Rather a gratuitous remark.]
>
> The chief contra-indications are: 1. Rapid increase of pain or of pressure symptoms. These are probably indicative of an early and fatal termination. If these symptoms pass away under treatment the question of operation can be again considered. 2. The presence of a second aneurysm. 3. Sepsis. 4. Involvement of the transverse part of the arch. The cases recorded by Hodgson show clearly that the patient's discomfort is much increased by consolidation taking place in this situation.

Professor A. A. Eshner[26] has collected the records of 36 cases, in which an aortic aneurysm has been treated by the introduction of wire into the sac and the passage of a galvanic current through the wire. In 19—i.e., in about half the cases—death followed within a month of the wiring, the best result being that obtained by Professor Rosenstirn, whose patient lived nearly 12 years after the operation. One of Professor Eshner's patients lived four weeks, the other a little over seven months.

The risk run in passing wire into the sac of an aneurysm of the arch of the aorta is well illustrated by a case treated by Mr. H. A. Ballance.[27] He introduced silver wire into the sac, and passed an electrolytic current through the wire. The patient lived ten months after the operation in comparative comfort. At the necropsy loops of silver wire were found in the sac, and loops of wire had also passed along the arch of the aorta, as far as the origin of the left common carotid artery and down to the bottom of the left ventricle. It is certainly very remarkable that a foreign body was tolerated in the heart so readily and for so long a period.

A careful consideration of the prospects afforded by wiring an aneurysm, with or without electrolysis, has convinced me that the operation, though quite justifiable in cases of abdominal aneurysm, cannot be of nearly the same service in cases of intrathoracic aneurysm. In the former case the surgeon can cut down and expose the aneurysmal sac, and can form a fairly clear idea as to the amount of sacculation present, and the operation, moreover, can be carried out when the wall of the sac is still in a satisfactory condition. In the case of an intrathoracic aneurysm the surgeon would, indeed, be a bold man who would propose to submit to surgical treatment an aneurysm which had not definitely come to the surface. By the time that this has occurred there is almost invariably a thinning of the sac wall and the risk of rupture. In addition the surgeon cannot satisfy himself that the wire has filled the sac. I expect, therefore, that in cases of intrathoracic aneurysm the operation of wiring will be more or less confined to those desperate cases in which there is a definite pulsating tumour on the chest wall, with the prospect that at no distant date external rupture will occur. If wiring succeeds in prolonging life in even a small proportion of these cases, and very occasionally effects an apparent cure, then I think that the surgeon may reasonably claim that he has done all that could be expected of him.

Galvano-Puncture.—Formation of White Thrombi by Needling.—Ligature of Neck of Sac.

I should feel inclined to restrict the use of galvano-puncture to cases in which the aneurysm has made its way through the ribs or costal cartilages, and where external rupture appears imminent. Cases of this sort have from time to time been recorded in which life has been prolonged in rapidly progressing cases, relief has been afforded to cough, paroxysmal pain, and pulsation, and finally death has taken place slowly and painlessly from gradual oozing from the thickened sac instead of by sudden rupture.

Sir William Macewen,[28] in a paper read before the Midland Medical Society in 1890, advocated the cure of aneurysm by inducing the formation of white thrombi within the sac. The instrument he employs is a cylindrical pin, tapering to a point, like an ordinary sewing needle, with rounded head at the other extremity. He gives the following directions for carrying out the treatment :—

> Before performing the operation the skin over the aneurysm ought to be carefully cleansed and rendered aseptic. The aseptic pin ought then to penetrate the sac and pass through its cavity until it comes in contact with the opposite side. It ought to touch and no more. Then one of two methods may be employed—either to move the pin over the surface of the inner wall so as to irritate its surface, or to allow the impulse of the blood-current playing on the very thin pin to effect the same object. ..... After acting thus for ten minutes at one part the point of the pin, without being removed from the sac, ought to be shifted to another spot, and so on until the greater portion of the internal surface opposite to the point of entrance has been touched; this ought to be done in a methodical manner.

The pin should be allowed to remain in a few hours, though it has been kept in for 24 or even 48 hours. The operation may require to be repeated on several occasions at intervals of about a week. In his original paper[29] Sir William Macewen reports 4 cases—2 of intrathoracic aneurysm, 1 of the abdominal aorta, and 1 of the right femoral. One of the intrathoracic cases and both the remaining cases were apparently cured by the treatment. In the case of the aortic aneurysm which died, at the necropsy the sac contained a large amount of firm white thrombi. Death in this instance occurred from asphyxia due to pressure of the aneurysm upon the trachea.

Though many theoretical objections might be alleged against this plan of treatment, the cases which Sir William Macewen brought forward, though few in number, are so striking that I am astonished that it has not received more attention at the hands of surgeons. Sir William Macewen wrote to me on this subject on Sept. 9th, 1912, as follows :—

> I have had numerous successes since (i.e., 1890), patients living for many years and working as before, with care however.

Mr. Gilbert Barling[30] in his remarks at the discussion on the Surgical Treatment of Aneurysm, on the three principal forms of surgical treatment adopted in the case of aortic aneurysm, did not take an optimistic view of these methods.

> He had never tried the introduction of wire, but he had tried electrolysis, and had been deeply disappointed with it, so that he was not likely to try it again. He had tried the operation of needling, but he did not think that the patient was either better or worse, and he was disappointed at the absence of improvement.

I think it doubtful whether surgeons in the future will attempt direct surgical interference in a case of thoracic aneurysm, but in view of the enormous strides that surgery has made of late years it seems impossible to limit their power of giving relief, if not cure. As an example of what has been attempted I may quote a case put on record by Tuffier.[31] The patient was a woman suffering from sacculated aneurysm of the first part of the arch of the aorta. As she was not more than 40 years of age, was in perfect general health, and was in imminent danger of rupture of the sac, Tuffier determined to ligature the sac close to its insertion into the aorta. This was done, but the aneurysmal sac was not removed. The omission was unfortunate, as the patient, who did well for some days after the operation, died on the thirteenth day from secondary hæmorrhage, due to gangrene of the sac and infection at the seat of ligature.

And here I must leave the question of the surgical treatment of thoracic aneurysm in the hands of the surgeons, hoping that in time to come they may be able to formulate some definite suggestions as to what kind of surgical interference is desirable and in what circumstances it should be adopted.

In concluding my lectures, I would again like to say how much indebted I am to Dr. Hugh Walsham for his generous assistance in putting at my disposal his large experience in the radiography of aneurysm, and I have also to thank most warmly Dr. Braxton Hicks, assistant pathologist at the Westminster Hospital, for his careful investigation of the post-mortem records of the hospital, which enabled me to make use of the valuable information therein contained.

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THE ROYAL SANITARY INSTITUTE.—A provincial sessional meeting will be held at Stafford on April 25th and 26th, when a discussion will take place on the Milk and Dairies Bill, to be opened by Dr. George Reid, county medical officer of health, Staffordshire County Council. Among those who are expected to take part in the discussion are Mr. T. W. H. Garstang, Dr. G. Petgrave Johnson, Dr. A. B. McMaster, Dr. Thomas Orr, Dr. H. Peck, Mr. T. Robinson, Dr. James Wheatley, and Dr. Meredith Young. The chair will be taken at 7.30 P.M. on Friday, April 25th, by Dr. Louis C. Parkes. Tickets for admission of visitors may be had on application to Dr. Reid, county council offices, Stafford, or to the secretary, 90, Buckingham Palace-road, London, S.W.

NON-PARASITIC CYSTS OF THE LIVER.

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NON-PARASITIC cysts of the liver are of uncommon occurrence, and the literature dealing with them, especially with large solitary cysts, was until recent years decidedly scanty. From a practical point of view these cysts may be divided into two classes—i.e., general cystic disease and solitary cysts. This classification is adopted by Bland-Sutton,[1] and although there is a good deal to be said for it, it has disadvantages, which will be referred to later.

General Cystic Disease.

General cystic disease is almost constantly associated with cystic disease of the kidneys, and rarely also of the pancreas, lungs, spleen, and brain. Out of 85 cases collected from the literature, Moschcowitz[2] found that the liver was affected alone in only 10. The condition may be found in children, but frequently it does not develop until adult life. There is a typical specimen in the Museum of the Royal College of Surgeons of England from a woman aged 46, which is figured in Bland-Sutton's book on "Gall-stones and Diseases of the Bile-ducts."

In the slighter forms of the disease the cysts are generally found just beneath the liver capsule, but when the condition is well marked the whole organ is affected and may be enormously enlarged. The general shape of the liver is preserved, but the cysts may project on its surface. The size of the cysts varies from a microscopic acinus to a cavity of the size of a pigeon's egg or larger. Absorption of the wall between adjacent cysts may occur, and often in the larger ones the remains of septa can be seen. Microscopically the cysts are found to be lined by a layer of epithelium, which is columnar in the smallest cysts, but as the cavity increases in size the epithelium becomes cubical and finally flattened. In the largest cysts the epithelial lining cannot be demonstrated, having disappeared by pressure atrophy. In some cases there is considerable increase in the amount of fibrous tissue in the portal spaces.

The contents of the cysts are usually clear, watery fluid, sometimes yellowish-brown in colour. The fluid contains albumin, mucin, cholesterin, epithelium and granular débris. No bile or bile-pigment is generally present.

In an early case, besides the macroscopic cysts one generally finds on microscopic examination a greater number of bile-ducts than are normally present in the liver. These are mostly situated in the portal canals, surrounded, like the other structures in the canal, by a prolongation of Glisson's capsule, and are hence spoken of as being intracapsular. Thus, instead of a normal single duct, as many as six may be present. A few ducts may also be found in the lobules, where normally they are never found. On section they appear as round, oval, or tortuous acini, lined by cylindrical or cuboidal epithelium. These supernumerary ducts are believed by Moschcowitz[3] to be aberrant bile-ducts of congenital origin, and their development into cysts is believed by him to be the cause of general cystic disease.

Moschcowitz discovered aberrant bile-ducts in the liver of a fœtus unaffected by cystic change. There were also present cystic kidneys, a meningocele, and supernumerary fingers and toes. The whole liver was permeated with a system of ducts, intracapsular and intralobular, having no connexion with the liver cells. Kilvington[4] also examined the liver of a stillborn child showing many congenital defects, including cystic kidneys, and found numbers of aberrant bile-ducts similar to those described by Moschcowitz. As the liver is developed as an outgrowth from the primitive gut, and originally consists of a system of branching tubes lined by columnar epithelium, Moschcowitz regards these aberrant ducts as a hypoplastic condition due to persistence of an embryonic state. It may be remarked here that small cæcal diverticula from the bile-ducts are commonly found in normal livers. Proliferation of the intrahepatic bile-ducts occurs in cirrhosis of the liver, as was first pointed out by Janowsky.[5] In the cases we are considering, however, there is no cirrhosis present, and, moreover, cysts are very uncommon in cirrhosis.

Fig. 1 is taken from a microscopic section of a liver from a body in the anatomy rooms at King's College, in which a small cyst of the size of a cherry was situated in the right lobe just under the capsule. Besides the larger cyst, several smaller ones were present, and in addition a number of aberrant ducts. Fig. 2 is taken from a section of a piece of the same liver near the portal fissure; it also shows a group of aberrant ducts.

As long ago as 1856 attention was drawn to general cystic disease of the liver by Bristowe,[6] who showed a specimen of this condition before the Pathological Society of London. The cysts are described as being scattered throughout the liver, arranged either singly or in clusters of two, three, four, or more. The larger ones were irregular in shape from fusion of adjacent cysts, and the remains of septa could be seen. The contents are described as thin colourless transparent serum. Microscopically, the cysts are described as consisting of fibrous tissue lined by flat epithelium.

In the same year Beale[7] showed specimens in which he injected the portal vein with size and the bile-ducts with Prussian blue. In two or three cases the injection escaped from the ducts into the cysts by rupture of their walls, but there was apparently no free connexion between the cysts and the normal ducts of the liver. There was no dilatation of the ducts, nor could any obstruction be made out. Many smaller cysts were found in the central part of the lobules, and therefore some distance from the ducts. The cysts were thought to arise by degeneration of liver cells.

In 1898 Still[8] brought before the same society two specimens of general cystic disease of the liver—one from an infant of 7 weeks, the other from a stillborn child. Both specimens showed great increase in the fibrous tissue throughout the liver, especially in the portal spaces. Still believes this excess of fibrous tissue is due to persistence of the fœtal condition, in which a large amount of mesoblastic stroma is normal. This feature has also been described by other observers. Still collected 35 cases from the literature, and found the disease occurred three times as often in females as in males. Of the 35 cases, 3 only occurred in infants, while of 26 others in which the age is recorded 17 occurred in adults over 50. He also showed that there was no degeneration of the liver cells, and suggested a congenital origin for cystic disease of both liver and kidney. He believed the cysts were due to irregularity in development, some of the original columns of cylindrical cells being left with their original lumen.

Moschcowitz,[9] in 1906, was able to collect 85 cases from the literature, but found the disease affected the sexes about equally. By collecting the statistics of Lejars, Luzzato, and Johns, he found that 19 per cent. of cases of congenital cystic kidney were associated with a cystic condition of the liver. Moschcowitz himself investigated pathologically 5 cases of general cystic disease, and came to the following conclusions. 1. Non-parasitic cysts of the liver are always associated with other congenital defects in the body, especially cystic kidney. 2. They are always developed from aberrant bile-ducts. 3. These aberrant bile-ducts are embryonic rests, and are only found in cystic liver or in the liver of congenital cystic kidney. 4. Two forms of general cystic liver occur—one from inflammatory hyperplasia of the aberrant ducts, the process advancing centrifugally; the other caused by retention in these ducts, due to congenital obstruction. 5. Congenital cystic disease of the liver is not to be regarded as a tumour formation.

Shaw and Elting[10] added three more to the cases collected by Moschcowitz, and of the total number of 88 cases found that 2 were fœtal, 7 in newly born children, 4 occurred in the first year and 1 in the eleventh year. The other 74 cases occurred in adults, mostly in people over 60. All the cases in infants were multiple, and all were associated with other defects. Heredity was shown to play some part. The following is a brief summary of other theories which have been brought forward to explain this disease.

1. That the cysts are formed by degeneration of liver cells (Pye-Smith[11]). It is hardly possible that this could lead to the production of a space bounded by a definite fibrous wall lined by nucleated cells.

2. Förster's[12] theory supposes that the cysts are due to dilatation of normal bile-ducts, which have been occluded by

inflammatory connective tissue. This theory received general acceptance at one time, and also received support in 1904 in a paper by Blackburn.[13] In many cases, however, there is no excess of connective tissue, and bile is usually absent from the cyst contents. Moreover, jaundice is never present in this condition.

3. Sabourin's [14] theory states that the condition is due to an overgrowth of bile-ducts, which he terms "biliary angioma."

4. That the cysts are tumours—in fact, cysto-adenomata, of the bile-ducts (Siegmund [15] and von Hippel [16]).

5. That the cysts are formed by tumour formation from embryonic remains (Borst [17] and Ribbert [18]).

Theories which invoke neoplastic formation as an explanation of the cysts are open to the very grave criticism that the microscopic appearance in early cases is unlike that produced by simple tumour formation elsewhere, the general appearance being one of infiltration rather than encapsulation. These theories are all discussed by Rolleston in his work on "Diseases of the Liver."

The condition of general cystic disease is, of course, not amenable to treatment, and is more of pathological than of clinical interest. In some cases, however, the largest of the cysts have been dealt with surgically, under the impression that a solitary cyst was present (*vide postea*).

Solitary Cysts.

Solitary cysts of the liver, on the other hand, are of considerable clinical interest, as they often produce well-marked symptoms and are usually amenable to surgical treatment.

Although the term "solitary cyst" is a convenient one, it will be found that in many cases of apparently solitary cyst the liver tissue adjacent to the cyst wall contains potential cysts in the shape of acini lined by epithelium, and in some cases actually small cysts in addition. The former resemble the aberrant bile-ducts which have already been described in association with general cystic disease. In fact, all stages seem to occur from a single cyst to general cystic disease, and the epithelial lining in all cases is practically always the same.

Solitary cysts may occur in children, but most of the reported cases have occurred in adults. When situated near the free margin or under-surface of the liver they often become more or less pedunculated, but sometimes they are entirely intrahepatic, with no suggestion of a pedicle.

As regards the pathology of solitary non-parasitic cysts, opinions are almost as diverse as in the case of general cystic disease. Comparatively few post-mortem specimens have been described. In 1882 Sharkey [19] brought before the Pathological Society a specimen of a solitary hepatic cyst from an adult patient who had died from cerebellar hæmorrhage. The cavity was of the size of a full-term fœtal head, and was entirely intrahepatic. Microscopically, the cyst was found to be lined by a single layer of flat epithelium, with an outer layer of fibrous tissue. The fluid contained no bile, but a large amount of albumin and chlorides.

Plenk [20] described the case of a woman, aged 40, who was admitted to hospital suffering from attacks of abdominal pain, swelling of the abdomen, and intermittent jaundice. The liver extended from the right fourth costal cartilage in the nipple line to the level of the navel. A clinical diagnosis of cirrhosis was made. Symptoms of peritonitis supervened, and the patient died shortly after a laparotomy. At the necropsy the peritonitis was found to be due to a perforated gastric ulcer. On the under-surface of the right lobe of the liver was a large smooth-walled cyst, reddish-white in colour, with patches of hæmorrhage, probably due to the coexisting peritonitis. Microscopically the cyst wall showed a layer of connective tissue lined by cubical epithelium, with isolated goblet cells. The liver tissue in close proximity to the cyst showed here and there proliferated bile-ducts. There were also large vessels showing proliferation of the intima, and islands of liver cells and some groups of leucocytes.

Shaw and Elting [21] relate the case of a single cyst of the liver treated by operation. The cyst had its origin in the right lobe and projected below the costal margin to the right iliac fossa. 900 c.c. of clear yellow fluid were drawn off, which contained a moderate amount of albumin. Microscopically only detritus was found. The patient died, and at the necropsy the cyst was found to be lined by a smooth glistening membrane, which on microscopic examination showed only fibrous tissue, no epithelium. The kidneys were normal.

Zahn [22] collected the post-mortem records of 14 cases. All had a ciliated columnar-celled lining, and in many cases smaller cysts lined by cylindrical epithelium were also present. The contents in all these cases were colourless, clear or slightly turbid fluid, yellow in only one case.

Bland-Sutton [23] gives an illustration of a solitary cyst growing from the free border of the liver. The specimen is in the Museum of the Royal College of Surgeons of England, and was obtained from a woman aged 38. Microscopically the wall consists of fibrous tissue lined by flat epithelium.

A considerable number of cases have been reported in which the cyst has been resected by operation, and the cyst wall and adjacent liver tissue subjected to microscopic examination. Hofmann [24] published such a case in 1902, and collected from the literature 17 other cases of solitary cyst in which operation had been performed. In some of these only incision and drainage had been done, while of those which had been resected a microscopic report is published only in 7. In Hofmann's case the wall of the large cyst showed no epithelial lining, but smaller cysts were also present with papillary growths projecting into their lumen. He regarded it as a cysto-adenoma of the bile-ducts. In König's [25] case, besides the large cyst, smaller cysts were also present, lined by cylindrical epithelium, and the same description also applies to Müller's [26] case. In Bayer's [27] case the cyst appeared to occupy almost the whole liver; incision and drainage were performed and a piece of the wall was removed for microscopic examination. This showed dilated bile-ducts and atrophied liver tissue. Müller's [28] second case is described as a cysto-adenoma. A large wedge of liver, including the chief cyst, was excised. The patient died, and at the necropsy many other large and small cysts were found in the liver. It is significant that in this case the kidneys also were cystic.

In Roberts's [29] case a very large cyst as well as a small one were opened and drained; the tumour is described as a papillary cysto-adenoma, and although not definitely proved, the case was thought to be similar to one operated upon by Keen in 1892, in which the cystic condition was shown to be due to the presence of coccidia. In Bobrow's [30] case multiple cyst formation was found in the wall of the large cyst, each cyst being lined by epithelium. Schultze's [31] case was a large solitary cyst lined by columnar epithelium.

Bland-Sutton [32] resected a more or less pedunculated cyst, which showed at its junction with the liver small loculi lined by epithelium and biliary ducts lined by cubical cells. The large cyst itself was lined by flat epithelium. Bland-Sutton thinks that the cyst arose from dilatation and fusion of the bile-ducts, and suggests that the condition is possibly brought about by the pressure of stays on the thin anterior strip of liver.

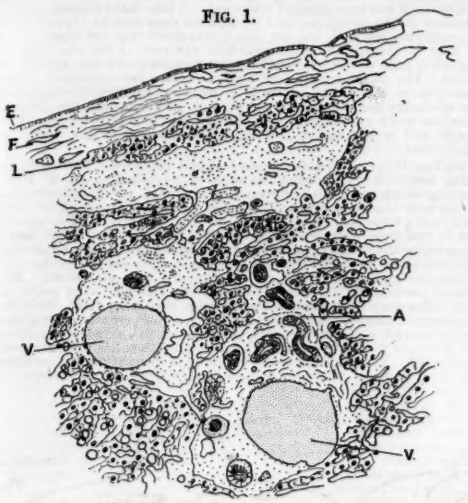
Many German authorities regard cysts of the liver as an outgrowth from the bile passages of an adenomatous type. Ziegler [33] refers to the subject but briefly, stating that adenoma of the bile-ducts may be solid or cystic. His illustrations of this condition show a large number of acini in the peri-portal tissue without any very definite capsule. Von Haberer [34] also regards simple cysts of the liver as an adenomatous growth, and believes general cystic disease is a further and more advanced form of solitary cyst. His own case showed one large cyst and some smaller ones at the upper and lower poles, which communicated with the main cyst. Microscopically the cyst showed a lining of cubical epithelium, and the piece of liver excised with the cysts showed proliferation of the bile-ducts, apparently unlimited, however, by any definite capsule. Ikonokoff's [35] case is simply described as a cystic adenoma of the bile-ducts.

It will be noted from the foregoing abstracts that in many of the cases, besides the chief cyst, smaller cysts were also present, and on microscopic examination small loculi lined by epithelium and an unusual number of bile-ducts in the liver tissue adjacent to the cyst. In fact, as already stated, all stages seem to occur from a single cyst to multiple cystic disease. If the latter is believed to arise from aberrant bile-ducts, the so-called solitary cyst quite possibly has its origin in the same source. It will be noted in the following table that in one case of localised cystic disease the kidneys were also cystic—a condition which, as has been

stated above, is frequently present with general cystic disease of the liver. This view of the origin of simple cysts is also supported by Kilvington,[36] who says that no sharp distinction can be drawn between large and small, single and multiple, cysts, and suggests that both have a similar origin.

The question of the contents of the cysts may, perhaps, be thought to throw some light on the matter. In general cystic disease the contents are usually clear watery fluid, sometimes yellowish-brown in colour. The fluid contains albumin, mucin, cholesterin, epithelium, and, rarely, bile. The contents of the solitary cysts are similar, except that bile is rather more frequently present. This is easily explained by supposing that, as the cyst increases in size, large intrahepatic bile-ducts come to open into it, their

FIG. 1.



Section of wall of cyst, discovered in a dissecting-room subject. E, Epithelial lining of cyst. L, Compressed liver cells. F, Fibrous wall of cyst. A, Nest of aberrant bile-ducts. V, Vein. The liver cells show considerable fatty changes.

walls being destroyed by pressure atrophy. This would also account for the discharge of bile, which is reported in some cases as having continued after the cyst has been opened and drained. Waring[37] states that bile may find its way in this manner into a hydatid cyst, so the same process may quite conceivably take place in a simple cyst. If the cysts arise as an adenomatous condition from normal bile-ducts, one would expect to find bile present in the fluid much more frequently than is actually the case. The presence of papillomatous growths in some of the cysts suggests more strongly a tumour formation, and possibly these cases may be of that nature, taking origin from aberrant bile-ducts. It will be noted, however, that Keen's case of cysto-papillo-adenoma of the bile-ducts was shown to be due to the presence of coccidia.

Some of the cases reported seem to have been retention cysts. Thus in North's[38] case, after several attacks of colic extending over four years with intermittent jaundice, a rapidly increasing tumour appeared in the left lobe of the liver. The cyst was aspirated, and five pints of coffee-coloured fluid was drawn off. The patient died from leakage of bile into the peritoneal cavity. At the autopsy the cyst was found to be the size of a man's head. There was a large calculus in the gall-bladder, and another the size of a marble in the common duct, one inch from the lower end. Waring[39] takes this view of North's case, but Hofmann[40] thinks it was a case of cysto-adenoma, and independent of the calculus in the duct.

In Mayo Robson's[41] case there was enlargement of the liver with jaundice. A cyst developed in the right lobe, which was aspirated, and 6 ounces of straw-coloured fluid drawn off. Two months later the cavity was opened with the cautery, and 8 ounces of fluid drawn off. Bile discharged freely from the wound. A month later Robson removed two stones from the common duct, and a large one from the gall-bladder.

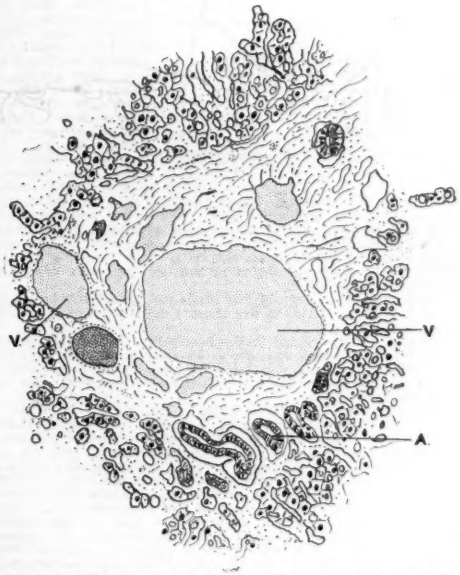
Another case of what was probably a retention cyst was published by Terillon.[42] In this case two litres of biliary fluid were drawn off by puncture. The patient died three months later, and post mortem a carcinoma of the liver was found and cystic dilatation of the bile-ducts.

Peyton Beale[43] has also recorded a case in which cystic dilatation of the liver was found post mortem two years after calculi had been removed from the gall-bladder and common duct. The cysts contained bile. Paton[44] has also recorded a somewhat similar case in which obstruction to the bile-ducts was caused by a hydatid cyst at the portal fissure. The intrahepatic cysts were caused by dilatation of the bile-ducts, and many of them contained calculi.

Retention cysts due to congenital atresia of the common bile-duct have also been described. Witzel[45] describes a case of congenital atresia of the common bile-duct in a female non-viable child, with a large cyst in the left lobe and a smaller one in the right lobe which communicated with each other.

Retention cysts due to extreme dilatation of the extra-hepatic ducts from congenital atresia have also been recorded. Oxley's[46] case was a female child of 5 months, which had an enormously distended abdomen, was jaundiced and emaciated. An abdominal tumour had been noticed since birth, which increased in size and formed a rounded tense globular swelling. This was aspirated twice, 36 and 16 ounces of bile being drawn off. The child died, and at the autopsy the gall-bladder was found to be normal but contained no bile. The cystic and hepatic ducts opened into the cyst, which proved to be a dilated common bile duct. The opening of this duct into the duodenum was impervious. Edgeworth's[47] case was a female child of 4½ years. Her illness began at the age of 6 months with an attack of jaundice which lasted three weeks. A tumour gradually

FIG. 2.



Section of another piece of the same liver, close to the portal fissure, apparently unaffected by cystic change. A, Aberrant bile-ducts. V, Vein.

developed, and was opened and drained. The child died, and post mortem it was discovered that the tumour was not, as was believed at the operation, a distended gall-bladder, but a greatly distended common bile duct. The lower end of the duct was very much constricted, admitting only a hair-pin.

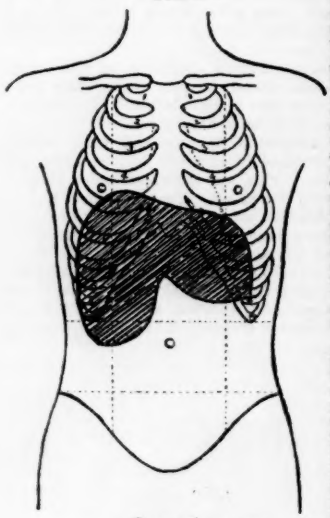
Doran[48] has recorded a case of a woman aged 42, in which he believed that the cyst, which contained three pints of "pure bile," was traumatic in origin. Three years before coming under treatment she received a severe blow on the right hypochondrium from a fall against a wash-tub. The patient was three months pregnant at the time, and abortion

followed in a few days. Doran suggests that the blow might have caused rupture of an intrahepatic duct, followed by slow extravasation of bile into bruised liver substance around it. As the cyst was opened and drained no portion was removed for microscopic examination. Kilvington thinks that cysts may also rarely develop from angiomata of the liver, while dilated lymph spaces have also been described as a cause of cyst formation. Langenbuch [49] mentions a case of dermoid cyst which contained hair and cartilage.

The following is a case of non-parasitic cyst which came under my own care:—

The patient, aged 27, first came under the care of my colleague, Dr. Basil Price, in October, 1910, when the following notes were made: "Married three years; one child, quite healthy, born in October, 1909. No miscarriages. She had always lived in London. No history of alcoholism or of any injury in the hepatic region. She nursed the child for five months and was treated for anæmia at the end of this time. Amenorrhœa since the birth of the child. Has had troublesome diarrhœa since July, 1909, the bowels acting several times a day; motions loose; never any blood. Occasionally she is constipated. Has complained of occasional pain in the right hypochondrium and epigastrium. No vomiting. Never had jaundice. Has wasted somewhat in the last 12 months. Is troubled with attacks of profuse sweating, especially at night."

FIG. 3.



Condition on Oct. 18th, 1910.—Thin, delicate-looking woman. Weight 7 st. 8½ lb. Skin and conjunctivæ have yellowish tinge. Heart and lungs normal. No ascites or swelling of the feet. Liver greatly enlarged; lower edge of right lobe reaches to level of navel. (Fig. 3.) Left lobe also apparently enlarged, its lower edge being just above the subcostal plane; well-marked notch between the two lobes. Upper margin of liver dulness in right nipple line at fourth intercostal space. The surface was everywhere smooth and regular. Rectal examination negative. Blood count: Red cells, 5,200,000; white cells, 12,000; hæmoglobin, 80 per cent. Nothing abnormal in shape of red cells. Von Pirquet's reaction positive. Temperature subnormal in the morning, with usually an evening rise to 99° or 100°F.

The patient stayed in hospital four weeks and gained 4 lb. in weight. The bowels acted from two to five times a day. She was able to eat ordinary food.

The patient was readmitted to the hospital on Oct. 9th, 1911, under my care, Dr. Price having seen her as an out-patient some days previously. Since leaving the hospital a year ago she has had occasional pain over the liver; there has been no swelling of the feet. Has had some shortness of breath.

Condition on Oct. 9th, 1911.—Weight, 7 st. 11½ lb. No trace of jaundice. Blood count: red cells, 4,940,000; white cells, 15,000. Abdomen: Liver greatly enlarged, with an obvious rounded projection forwards below the inner part of the right costal arch. (Fig. 4.) On palpation this projection was felt to be cystic, but the tension in it was not great. The lower edge of liver reaches an inch below the umbilical plane. Peritoneal friction was palpable and audible through the stethoscope over the cyst. The rest of the liver was firm. Liver dulness began above in the right nipple line at the second intercostal space and was absolute at the fourth space. No hydatid fremitus made out. The left superficial epigastric vein was very much dilated and tortuous; the blood-flow in this vein was definitely upwards. Right vein not noticeable. Veins also visible over lower part of chest.

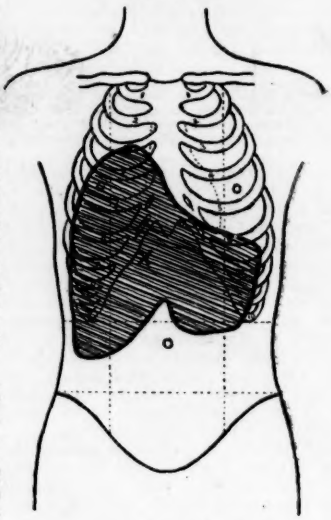
Diagnosis.—A cyst of the right lobe of the liver, possibly hydatid or a simple non-parasitic cyst. The chief point against hydatid was the comparatively low tension in the cyst. There was no eosinophilia. The diarrhœa was thought to be due to pressure upon the portal vein causing portal congestion, and thus to correspond to the diarrhœa of alcoholic cirrhosis. The dilated superficial epigastric vein was thought to be due to pressure upon the inferior vena cava, although its presence only on one side was a curious point. The cyst has obviously enlarged considerably in the last 12 months, mainly in an upward and forward direction.

Operation.—A three-inch incision was made over the most prominent part of the cystic swelling, just below the costal margin, through the fibres of the right rectus. A few delicate adhesions were found between the tumour and the anterior abdominal wall. At the most prominent part the wall of the cyst was milky-white in colour, from thickening of the peritoneal coat; outside this area the colour was a greenish-brown. The abdomen was packed off with gauze and an exploring needle and syringe drew off from the cyst a green fluid looking like bile. The cyst was then emptied with a trocar and cannula, four pints of the same kind of fluid being drawn off. A probe passed into the cyst for a distance of 7 inches and revealed an enormous cavity which must have extended almost to the diaphragm above and crossed the middle line for several inches. It was not considered advisable to remove any of the cyst wall, and microscopic examination of the cyst wall where the opening was made would probably not have revealed anything of interest, as the wall at this point was thin and fibrous. A rubber tube was fixed in the opening into the cyst, which was stitched to the parietal peritoneum. The rest of the wound was closed in layers in the usual way. The gall-bladder and bile-ducts were not seen, but the cyst was clearly intrahepatic and quite independent of these structures.

After-history.—For some days after the operation there was a profuse discharge of bile-coloured fluid, which changed from green to a yellow-green, and also became thicker and more mucoid than that removed at the operation. The cavity was washed out with sterile water. The diarrhœa ceased immediately after the operation and did not return. The day after it was noted that the direction of the blood flow in the left epigastric vein was distinctly downward, whereas before the operation it had been distinctly upward. I take this to mean that the pressure on the portal vein and the inferior vena cava had been relieved by emptying the cyst. On Oct. 21st it was noted that the upper margin of liver dulness in the right nipple line was now at the sixth rib, and the lower edge of the liver could be felt an inch above the level of the navel. The night sweats continued as before the operation. Some infection of the cavity occurred a week or so after the operation, the discharge became offensive and muco-purulent, and the temperature rose every evening to about 100°–101° F. This subsided after a few weeks, and by the end of December the capacity of the cavity had diminished to 5 oz.

On Jan. 11th a most unfortunate incident occurred. The cavity was being irrigated with a weak solution of hydrogen peroxide, a proceeding which had been performed by the ward sister daily for some weeks with beneficial results, when the patient complained of severe pain, and a little hæmorrhage occurred from the sinus. The opening had by this time contracted considerably, and the tube fitted closely. Apparently the pressure caused by the escaping gas from the hydrogen peroxide either ruptured the cavity or tore it from the abdominal wall. Peritonitis rapidly followed, and laparotomy was performed. Bile-stained purulent fluid was found all over the abdomen; the pelvis and both loins were drained, but the patient died next day. This unfortunate occurrence shows the danger of using peroxide of hydrogen for the irrigation of cavities unless there is very free exit for the evolved gas, a danger to which, as far as I know, attention has not previously been called. The accident occurred three months after the operation, and there is every reason to believe that, but for its occurrence, the patient would have made a complete recovery. No post-mortem examination was allowed.

FIG. 4.



Examination of the fluid contents of the cyst.—Clear, slightly mucoid, dark green in colour, specific gravity 1007, slightly alkaline, albumin present in abundance. Bile tests (Pettenkofer and Gmelin) strongly positive. No reduction with Fehling's solution. Slight deposit on standing, which microscopically consists of granular débris, cholesterin crystals in abundance (notched plates), no hooklets or scolices.

This is undoubtedly one of those rare cases of hepatic (presumably solitary) cysts of non-parasitic origin. Its position in the interior of the right lobe of the liver excludes the possibility of its having arisen from dilatation of the gall-bladder or of the extrahepatic bile-ducts. Moreover, obstruction to the cystic duct, as, for instance, by an impacted calculus, produces a hydrops of the gall-bladder, the contents of which are almost clear mucus, whereas the contents of this cyst were almost pure bile. The absence of jaundice, with the exception of a faint tinge noticed a year before the operation, practically excludes obstruction in the extrahepatic ducts as a cause of the cyst formation. It is known that calculi may exist for a long time in the common duct without giving rise to jaundice, but in these cases there cannot be any increase in pressure in

Table giving Details of 34 Cases of Large Cyst or Cystic Tumour of the Liver submitted to Operation.

No.	Operator, year, and publication.	Sex and age.	Symptoms, &c.	Site.	Contents.	Operation.	Pathological report.	Result.
1	Gloz, 1864 (cited by Winckler, Zur Kasuistik der Lebercyst. Inaugural Dissertation, Marburg, 1891).	M., 28	Large cyst; rapid growth; caused severe dyspnœa.	Right lobe anterior and inferior surfaces.	6 litres removed in two tappings.	Multiple punctures.	Not described.	Death after several punctures.
2	Cousins, 1874. Brit. Med. Journ., 1874, vol. ii., p. 700.	F., 27	Diagnosed as ovarian. Large cyst.	Under surface.	2½ gallons clear limpid yellow fluid.	Partial resection. Stump fixed to abdominal wall.	Simple cyst. Specimen in Royal College of Surgeons Museum.	Death 36 hours after operation from peritonitis.
3	North, 1882. New York Medical Reports, 1882.	M., 45	Attacks of colic and jaundice due to calculi in common duct. Rapidly increasing swelling below left costal margin.	Left lobe.	5 pints coffee-coloured fluid. Specific gravity 1015. Contained albumin and bile.	Aspirated.	Cyst size of man's head.	Death from leakage of bile into peritoneal cavity. Post mortem, calculi in gall-bladder and common duct.
4	Kaltenbach (cited by Winckler, cf. No. 1).	F.	Diagnosed as ovarian. 10 years' history. Filled whole abdomen. Punctured several times (320 litres in all drawn off).	Inferior surface.	Viscid greenish-brown fluid.	Resection.	Not described.	Recovered. Well 5 years later.
5	König, 1886 (cited by Hüter, Inaugural Dissertation, Göttingen, 1887).	F., 11	Filled whole abdomen. Rapid development. Fluctuation.	Inferior surface of right lobe.	2½ litres greyish fluid containing cholesterin.	Resection. Raw surface closed by suture.	Large and small cysts, lined by cylindrical epithelium. (Diagnosis: cysto-adenoma.)	Recovery.
6	Ahlfeld, 1890 (cited by Winckler, cf. No. 1).	F., 38	Diagnosed as ovarian. Irregular painful menstruation.	Inferior surface.	8 litres slimy yellow fluid. Albumin, trace of bile, cholesterin.	Incision and drainage.	Cyst wall of connective tissue. No epithelium demonstrated.	Recovery. Fistula at end of 3 months.
7	Müller, 1891. Verhandlungen der deutschen Gesellschaft für Chirurgie, 1893.	F., 59	Filled whole abdomen. Swelling noticed 10 years ago. Bladder symptoms, diagnosed as ovarian.	"	6 litres chocolate-coloured fluid.	Resection of two-thirds; suture of rest to abdominal wall.	Large and small cysts, lined by epithelium. Diagnosis: cysto-adenoma.	Recovery. Well after 6 years. (Verhandlungen der deutschen Geselischaft für Chirurgie, 1897, i., 137.
8	Terillon, 1891. Bulletin et Mémoires de la Société de Chirurgie, 1891.	M., 52	Great wasting. Intense jaundice.	Intra-hepatic.	2 litres bilious fluid.	Puncture.	Probably a retention cyst.	Death after 3 months. Post mortem, carcinoma of liver and cystic dilatation of bile-ducts.
9	Körte (cited by Langenbuch).	?	Cysts as large as an egg.	Liver margin.	Serous fluid.	Incision and drainage.	Not described.	Recovered.
10	Bayer, 1892. Prager Medicinische Wochenschrift, 1892. No. 52.	F., 56	Very large tumour. Rapid development (4 months). Fluctuation. Bowels irregular. No jaundice. Pallor.	Occupied whole liver.	8 litres brownish-grey fluid.	"	Section showed atrophied liver tissue and dilated ducts.	Recovered.
11	Berg, 1894. Hygieia, Band iv., 1894.	F., 45	Epigastric tumour, size of hen's egg, to left of mid line.	Anterior border of left lobe. Pedunculated.	—	Resection.	—	Recovery.
12	Roberts, 1894. American Journal of Medical Sciences, 1894.	F., 56	Great enlargement of liver.	Intra-hepatic.	Clear limpid fluid.	Operation in two stages. Cyst incised on eighth day. Also several small cysts opened.	Diagnosis: cysto-adenoma.	Died 3 weeks after operation. Bed sores. Post-mortem, liver greatly enlarged. Over three-fourths of it riddled with cysts. One contained pus. Both kidneys cystic.
13	Chrobak, 1894. Wiener Klinische Wochenschrift, 1898, No. 14.	F., 46	Swelling in region of liver 5 years. No pain. Last six months pain, dyspnœa, loss of strength. Filled almost whole abdomen. Surface bossy. Fluctuation.	Large cyst in right lobe.	Half a litre fluid. Yellow green, alkaline. No bile. No sugar. Albumin, 30 per cent.; specific gravity 1014.	Operation in two stages. Incision and drainage.	Smaller cysts scattered over surface of liver, chiefly in right lobe.	Recovered. Well 5 months later.
14	Müller, 1896. Verhandlungen der deutschen Gesellschaft für Chirurgie, 1897, I., 137.	F.	Very large; reached to pelvis. 6 years' history.	Right lobe.	Clear serous fluid.	Excision of a large wedge. Innumerable small cysts opened in the process.	Diagnosis: cysto-adenoma. Cysts varied in size from a pea to a fist.	Died on eleventh day from embolism. Post mortem, kidneys also cystic.
15	Czerny, 1898 (cited by Petersen, Verhandlungen der deutschen Gesellschaft für Chirurgie, 1898).	?	Large tumour.	?	?	Resection.	Cyst of bile-ducts.	Recovered.
16	Bobrow, 1898. Chirurgia, Band iv., p. 36. Reference in Centralblatt für Chirurgie, 1899, No. 10.	F., 51	Swelling 4 years. At first size of a fist, finally 20 ins. in diameter. Connected with liver. Gall-bladder lay behind.	Inferior surface.	Dark fluid containing threads.	Resection of sac; stump sutured to abdominal wall.	Multiple cyst formation in wall; lined by epithelium. Diagnosis: adeno-cystoma.	Recovered.

Table giving Details of 34 Cases of Large Cyst or Cystic Tumour of the Liver submitted to Operation (continued).

No.	Operator, year, and publication.	Sex and age.	Symptoms, &c.	Site.	Contents.	Operation.	Pathological report.	Result.
17	Porter, 1898 (reported by Shattuck). Boston Medical and Surgical Journal, 1900, p. 427.	F., 63	Abdominal swelling; painless; not tender; reached to iliac crest. Fluctuation. Hæmorrhage from bowel.	Upper surface of liver, close to falciform ligament. Liver pushed down.	1 gallon of clear, colourless fluid. After a time some bile discharged from sinus.	Incision and drainage.	Diagnosis: cysto-adenoma of bile-ducts. Cyst wall contained bile-ducts and small cysts.	Died some months later after second operation to close persistent sinus.
18	Schultze (cited by Leppmann). Deutsche Zeitschrift für Chirurgie. Band liv., 1900.	F., 14	Swelling 14 days. No jaundice. Round tumour reaching to crest of ilium, continuous with liver dulness. Fluctuation.	Inferior surface.	1500 c.c. Viscid turbid yellow-brown. Specific gravity 1013. No sugar.	Resection of sac; operation in two stages.	Cyst lined by columnar epithelium. Dilated bile-ducts in outer layer of cyst.	Recovered, with persistent sinus.
19	C. Hofmann, 1900. Mittheilungen aus den Grenzgebieten der Medizin und Chirurgie, 1902.	F., 28	Abdominal swelling 6 months. No trauma. Tumour occupied almost whole abdomen, especially above, to right.	Pedicle attached to quadrate lobe.	Muddy; yellow-grey. Albumin. Cell detritus.	Resection; raw surface sutured.	No epithelium in large cyst. In wall were smaller cysts with papillary growths projecting into lumen.	Recovery.
20	Schmidt (cited by Waring).	F., 60	Small tumour of liver.	?	?	Resection.	Reported as cysto-adenoma. Tumour contained a mass of cysts.	Recovery. Well 6 years later.
21	Bird (reported by Kilvington). Intercolonial Medical Journal of Australasia, vol. vii., 1902, p. 557.	?	Fluctuation. Low-tension cyst.	?	?	Incision and drainage.	Simple cyst.	Recovered. Two years later cyst refilled, or a fresh one developed.
22	Mayo Robson, "Gall-stones," Case 28. (Also "Diseases of Gall-bladder," Case 35.)	F., 42	Hypertrophic cirrhosis with jaundice. Fluctuating swelling; aspirated by Churton. Reaccumulated; opened again. Jaundice improved at first; then stationary.	Right lobe.	6 oz. clear straw-coloured. Later 8 oz. Bile discharged from wound later.	Aspirated first; then incised with cautery. Cholecystotomy and choledochotomy 4 weeks later.	? Retention cyst.	Died from pneumonia several weeks later.
23	Doran, 1903. Transactions of the Royal Medical and Chirurgical Society, 1904. Also Brit. Med. Jour., 1903, vol. ii.	F., 42	Blow over liver 3 years previously. Jaundice 4 months. Irregular vomiting. Profuse perspiration. Liver enlarged. 10 days before admission violent attacks of pain in upper abdomen. Attacks recurred. Diarrhœa. Large fluctuating swelling to right of navel. Menstruation regular but scanty. Wasting.	Right lobe. Gall-bladder and ducts lay behind.	48 oz. pure deep green bile. Later 16 oz. bile removed. Free discharge of bile from wound for some weeks.	Incision and drainage.	? Traumatic cyst.	Recovery. Cyst closed in 9 months. Patient well 6 months later. (Brit. Med. Jour., 1905, vol. ii., p. 1319.)
24	Miller, 1903. American Journal of Obstetrics, vol. xlviii., August, 1903, p. 182.	F., 2½	Abdomen enlarged at birth. No jaundice.	Reported by Doran as intrahepatic. Miller believed it to be a dilated gall-bladder.	5 pints of bile.	Operation in two stages. Opened with cautery.	—	Recovery.
25	Morton, 1903. THE LANCET, Nov. 14th, 1903, p. 1395.	F., 63	Swelling 2 months. No other symptoms. Cyst size of an orange.	Right lobe just above quadrate lobe.	Clear, straw-coloured fluid.	Incision and drainage.	Simple cyst.	Recovery.
26	Blackburn, 1904. Transactions of the Pathological Society, vol. lv.	F., 49	Swelling under left ribs for several months. Albumin and pus in urine.	Right lobe. Cyst size of tennis ball.	Watery straw-coloured fluid; no sugar. Albumin.	Incision and aspiration.	Large number of smaller cysts present.	Recovery. Left kidney excised later; it was a mass of cysts. Well 3 years later.
27	Reid. Intercolonial Medical Journal, vol. i. (Cited by Blackburn.)	M., 62	Pain in left lobe of liver. Swelling.	—	Bile-stained fluid.	Incision and drainage.	—	Died. Post mortem, cystic kidneys, and liver honeycombed with cysts.
28	Bland-Sutton, 1905. Brit. Med. Jour., 1905, vol. ii., p. 1167.	F., 75	Epigastric swelling, size of apple, increased to size of man's head. Painless. Clinically resembled mesenteric cyst.	Lower border of left lobe. Pedunculated.	2 pints brown fluid, neutral. Specific gravity 1007. Trace of blood; no sugar. Scanty solid matter.	Resected.	Wall consisted of fibrous tissue lined by flat epithelium. At juncture with liver, several small loculi lined by epithelium, and several biliary ducts. (Lockyer.)	Recovery.
29	Ikonokoff, 1906 (Russk. Vrach, St. Petersburg, 1906. Quoted *in extenso* by von Haberer. *Vide* No. 30).	?	Jaundice 15 years previously. Pain in region of liver; swelling.	In right lobe.	?	Partial resection; stump fixed to abdominal wall.	Cyst size of child's head. Diagnosis: cystic adenoma of bile-ducts.	Recovered. Still had fistula 1½ years later.

Table giving Details of 34 Cases of Large Cyst or Cystic Tumour of the Liver submitted to Operation (continued).

No.	Operator, year, and publication.	Sex and age.	Symptoms, &c.	Site.	Contents.	Operation.	Pathological report.	Result.
30	Von Haberer, 1909. Wiener Klinische Wochenschrift, 1909, vol. xxii., p. 1788.	F., 34.	Six months' pain in upper abdomen. Vomiting of watery fluid. Night-sweats. Swelling: 14 days. Size of child's head in epigastrium. Gastric peristalsis visible to left of cyst. Colon below tumour. Diagnosed as pancreatic cyst or adhesive form of tuberculous peritonitis.	Occupied whole of left lobe, extending right up to falciform ligament.	Clear, bright yellow mucin. Albumin 6 per cent. Bile pigment. Glycogen.	Left lobe excised *in toto*.	One large cyst; several smaller ones at upper and lower poles, which communicated with large cyst. Lined by cubical epithelium. Adjacent liver show excessive number of bile-ducts. Diagnosis: cysto-adenoma of bile-ducts.	Recovery.
31	Shaw and Elting, 1909. Archives of Pediatrics, New York, 1909, vol. xxvi., p. 818.	F., 1½.	Abdominal swelling, increasing. Projected below costal margin to right iliac fossa and to mid-line. No jaundice.	Right lobe.	900 c.c. clear yellow fluid. Moderate amount albumin.	Incision and drainage.	Cyst lined by smooth glistening covering. No epithelium could be seen.	Died from shock. Post-mortem, kidneys healthy; gall-bladder normal.
32	Aldous, 1911. Brit. Med. Jour., 1911, vol. i.	F., 43	Epigastric swelling 2 months. Biliousness. No pain. Fluctuation.	"Free border of liver."	12 pints thin, dark, muddy fluid. No bile. Hæmoglobin crystals.	Incision and drainage.	Simple cyst.	Recovery.
33	Corner, 1912. Medical Press and Circular, 1912.	F.	15 years; attacks of colicky pain in right hypochondrium. Vomiting. No jaundice. Tumour suggested distension of gall-bladder.	Right lobe. Anterior margin. Cyst 4 in. in diameter.	Slightly opalescent fluid.	Resection.	Simple cyst.	Recovery.
34	Sidney Boyd, 1911.	F., 27	Anæmia; amenorrhœa; diarrhœa. Pain in right hypochondrium. No vomiting. No jaundice. Wasting. Temperature 99°–100° F. Profuse perspirations. Some dyspnœa. Fluctuation.	Right lobe, intrahepatic.	4 pints clear mucoid, dark green. Specific gravity 1007. Alkaline. Albumin. Bile present. Cholesterin.	Incision and drainage.	Simple cyst.	3 months after operation died from peritonitis following rupture of sinus.

the bile-ducts. The presence of a large quantity of bile in a simple cyst, apart from those due to retention, is of rare occurrence. With the exception of Doran's case, which was believed to be due to trauma, and in which the contents were also practically pure bile, this is the only case on record in which bile was present in any great quantity. In the report of some cases, however, the presence or absence of bile is not stated. The explanation of the presence of bile in a simple intrahepatic cyst has already been suggested—namely, that as the cyst enlarged, an intrahepatic duct or ducts came to open into it. This would also account for the discharge of bile which occurred after the operation. The absence of a post-mortem examination, of course, leaves one in some doubt, but I am inclined to regard this case as one of a simple cyst, probably arising in aberrant bile-ducts.

I have been able to collect 33 cases from the literature in which a large cyst or cystic tumour of the liver has been subjected to operative treatment. Eighteen of these were collected by Hofmann[50] in 1902, and Doran[51] gave an abstract of five of these cases in his paper in 1903, together with three others not quoted by Hofmann. As Doran's is the only paper published in English in which any number of cases has been collected, it seems advisable to give an abstract of all the reported cases in the accompanying table.

Cysts may also occur on the surface of the liver under its peritoneal coat or in the peritoneal ligaments of the liver. Thus Henderson[52] records a case of cyst of the round ligament of the liver operated on by Mayo. The symptoms came on suddenly with violent epigastric pain, from which the patient recovered and had no discomfort for some time afterwards.

A case recently came under my notice of a woman with advanced cystic disease of both kidneys. She died while in hospital from uræmia, and at the necropsy, besides the polycystic condition of the kidneys there were two thin-walled serous cysts on the under-surface of the liver, close to the portal fissure. Possibly the case recorded by Ward Cousins (No. 2 in the table) and also some others belongs to this category.

A similar case came under my observation in 1908. The patient was under the care of Mr. Peter Daniel at Charing Cross Hospital, who operated upon her and who has kindly allowed me to refer to the case here. She was a woman aged 56, who had suffered for over two years with pain after food and irregular vomiting. A swelling had been detected in the region of the gall-bladder two years previously and operation advised but declined. The swelling had increased more rapidly in the last two months. At the operation a large thin-walled cyst was found to spring from the under-surface of the liver; the gall-bladder lay on the left side of the cyst and contained a few calculi. There were no calculi in the common or hepatic ducts. The cyst was extirpated and the gall-bladder removed. The contents of the cyst, which amounted to several pints, consisted of straw-coloured fluid, specific gravity 1010, alkaline, contained a moderate amount of albumin, but no bile. No epithelium could be demonstrated in the cyst wall. Possibly these cases have an origin in an extrahepatic aberrant bile-duct, which has been shown by Renault[53] to occur especially on the inferior surface.

Clinical features of solitary non-parasitic cysts of the liver.—The most striking point is the great preponderance of the condition in the female sex. Of the 34 cases collected in this paper 24 were in females, 4 are stated to have occurred in males, while the sex is not stated in 6—i.e., out of 28 cases in which the sex is stated nearly 86 per cent. were in females. Of the 4 which occurred in males, one was North's case of retention cyst due to an impacted calculus; one was Terillon's case associated with carcinoma of the liver, and was also probably a retention cyst. The greater preponderance of the condition in females is in agreement with its suggested congenital origin, as developmental defects are well known to be more common in that sex. Both Hofmann[54] and Bland-Sutton[55] think the greater frequency in females is possibly associated with the pressure of stays.

The age of the patients is stated in 26. The youngest was Shaw and Elting's case, which was 18 months old. Miller's case was operated on at the age of 3, but the abdomen had been noticed to be enlarged at birth. The oldest was 75 (Bland-Sutton's case).

The clinical signs and symptoms are very variable, depending on the size and situation of the tumour and its pressure effects.

Pain does not appear to be a very marked feature. Indeed, in some cases its entire absence is particularly stated. A certain amount of pain in the upper abdomen is reported as occurring in some cases; in my own case this was associated

with palpable friction over the cyst, due to localised peritonitis. Doran's case had several attacks of pain in the ten days preceding operation.

Dyspepsia and vomiting occurred in several cases. Gastric peristalsis was noted in one case. Diarrhœa was a marked feature in only two cases; this may have been due to portal congestion from pressure caused by the cyst. Irregular action of the bowels is noted in some cases.

Jaundice, independently of calculi in the common duct and malignant disease, occurred in only one case. It was apparently due to pressure on the bile-ducts at the portal fissure, but catarrh of the ducts may also have been a contributory cause. In my own case a faint trace of jaundice was noted about a year before operation, but soon passed off.

Interference with menstrual function is recorded in some cases, the catamenia being scanty or absent altogether. A certain amount of wasting and loss of strength was sometimes present, while profuse perspiration was a noticeable feature in two cases.

An abdominal swelling, in most cases diagnosed as a cyst, was present in all cases. Its size varied from a comparatively small tumour to one occupying almost the whole abdomen. In the latter cases dyspnœa was sometimes present, and in one case pressure on the bladder caused symptoms.

Fluctuation was generally readily obtained. In some cases the surface was bossy. A characteristic feature of non-parasitic cysts is their comparatively low tension. A connexion of the cyst with the liver can generally be made out by careful palpation, if necessary in a hot bath to secure good muscular relaxation. In the smaller cysts the tumour was situated in the upper part of the abdomen, usually on the right side, sometimes in the middle line or on the left. The cyst sometimes extends upwards and causes elevation of the diaphragm, raising the level of hepatic dulness. Rapid development of the cyst is often a striking feature. On the other hand, in some cases the cyst had been known to be present for many years before treatment was sought.

Enlarged superficial abdominal veins were not noted in any case except my own. This point and its explanation have already been referred to. Considerable hæmorrhage from the bowel occurred in one case, but hæmorrhoids were not specially stated to be present.

Probable course and complications.—Progressive increase in size, often at a rapid rate, is to be confidently expected in these cases. If neglected no doubt the patient will die in the same way as a case of ovarian cyst. Destruction of liver tissue in a large intrahepatic cyst will no doubt hasten the end.

I can find no account of the occurrence of spontaneous or traumatic rupture of a simple liver cyst, but it is of course a possibility. Torsion might conceivably occur in a very much pedunculated cyst, but, as a rule, the pedicle is too thick and short. Kilvington[56] refers to a case of fatal hæmorrhage into a non-parasitic liver cyst under the care of Allen, but otherwise there is no record of this accident. Kilvington observes, however, that minute hæmorrhages are frequent even in small cysts. Suppuration may quite conceivably occur, although no reference to it is made in the literature. Some cases of liver abscess may be suppurating cysts. Suppuration had occurred in one of the cases of general cystic disease reported by Moschcowitz.

Prognosis.—I think we may agree with Hofmann[57] that, if operable, the prognosis of non-parasitic cysts of the liver is not unfavourable. That of general cystic disease is, of course, very bad, especially if associated with cystic kidneys. It must be remembered, however, that in many of the cases reported in which a single cyst was believed to be present operation has disclosed the fact that multiple cysts, or even general cystic disease, sometimes with cystic disease of the kidneys, has been present. Moreover, fresh cysts may develop after one has been cured by operative measures, as in the case recorded by Bird.[58]

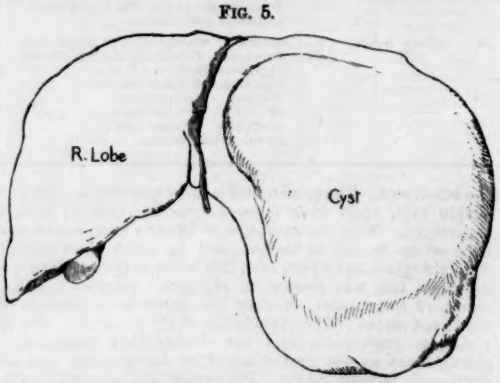
Treatment.—Operative treatment is indicated in all cases of apparently solitary cyst of the liver, and even when multiple cysts have been present considerable relief has been afforded by treatment of any large cyst or cysts. The exact procedure will depend upon the condition found on opening the abdomen. Bland-Sutton[59] urges that resection should be performed, and whenever possible this is the operation of choice. A wedge of liver at the base of the cyst is excised, and it may be possible to bring the surfaces together by suture. Where the cyst is at all pedunculated this is readily done, but when the cyst invades the substance of the liver to a large extent this would be a formidable proceeding, and in some cases impossible. No doubt individual surgeons would differ in their practice in border-line cases. An additional argument in favour of resection with the neighbouring hepatic tissue is that potential cysts would also be removed and recurrence of the trouble prevented.

Partial resection of the sac with suturing of the stump to the edges of the parietal incision has been done in several cases with satisfactory results. No doubt the smaller cavity so produced would close sooner than if the whole cyst were drained. This procedure, however, could only be done in certain cases, and when the cyst is almost entirely intrahepatic, incision and drainage is the only method to be adopted. The resulting cavity may take months to close. It is difficult to avoid infection in cases where prolonged drainage is carried out.

Kilvington[60] warns against the use of the curette, and no doubt the resulting hæmorrhage may be dangerous. The same writer suggests that a simple cyst should be dropped back into the abdomen when emptied, unless bile or calcareous plates are present. Presumably refilling of the cyst would be more likely to occur after this procedure than if drainage is adopted.

Simple puncture should not be performed. Although it has sometimes met with success it has often been fatal. Of the cases collected together in this paper, and in which surgical treatment was adopted, recovery occurred in 23.

FIG. 5.



Von Haberer's case of non-parasitic cyst of the left lobe of the liver. The whole of the left lobe was successfully resected.

Fig. 5 shows the condition of the liver in Von Haberer's case, in which the whole left lobe of the liver was successfully resected.

Postscript.—Since this paper was written a later edition of Dr. Rolleston's work on Diseases of the Liver has been published. In reference to Moschcowitz's view, to which reference has been made in this paper, Dr. Rolleston does not consider the structures described by him are aberrant bile-ducts, but the microscopic cysts of a cystic liver. Dr. Rolleston thinks that general cystic disease of the liver is quite possibly due to some special form of fœtal cholangitis and pericholangitis, causing obstruction to the bile-ducts. This practically coincides with Förster's theory, which has been referred to above.

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NOTES ON
THE PATHOLOGY OF TUBERCULOSIS IN INFANCY AND CHILDHOOD.

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IN the post-mortem room the evidence as to the nature of tuberculosis in young children does not always agree with the views sometimes put forward. It is noticeable that the disease often affects the lymph nodes of the abdomen and thorax, and is in many instances limited to these nodes. Such disease may exist and not be suspected during life. However, there is danger of making too much of the lymph-gland disease and in that way of overlooking the fact that chronic pulmonary tuberculosis, with or without cavitation, is by no means rare in young children. An analysis of the post-mortem records made during the last six years at the Manchester Children's Hospital, Pendlebury, shows the nature of tuberculosis in children of the class admitted to hospital wards. Both medical and surgical cases are included. The cases are selected in the sense that they were thought suitable for in-patient treatment and that they died. Further, 76 per cent. of the cases showing tuberculous lesions at the post-mortem examination had actually died from the tuberculous affection, and in the remaining 24 per cent. the tuberculous lesion was either unimportant or was not the cause of the fatal illness. These facts are pointed out in order to show that the figures to be given later do not refer to tuberculosis in children in general.

General figures.—During a period of six years—March, 1906, to February, 1912—there were 962 deaths, of which 242, or 25 per cent., were clinically tuberculous, and 323 necropsies, of which 150, or 46 per cent., showed macroscopic evidence of tuberculosis. Of the 150 cases, 89 per cent. showed glandular tuberculosis, 17 per cent. showed glandular tuberculosis alone, 54 per cent. showed pulmonary tuberculosis, 14 per cent. pulmonary tuberculosis alone, 49 per cent. intestinal and peritoneal tuberculosis, 12 per cent. peritoneal tuberculosis with no intestinal disease, 3 per cent. tuberculosis limited to the intestine and abdominal glands, and at least 44 per cent. marked general tuberculosis. The evidence from the post-mortem examination can be conveniently divided into four main headings: (1) glandular tuberculosis; (2) pulmonary tuberculosis; (3) meningeal tuberculosis; and (4) tuberculous mediastino-pericarditis.

1. *Glandular tuberculosis.*—In only 16 of the 150 cases (11 per cent.) showing tuberculosis were the lymph nodes free from that disease. Probably this percentage would have been lower if the glands had been tested microscopically or by inoculation. The glands most commonly affected are the bronchial in the thorax and the mesenteric in the abdomen. In comparison the mediastinal and retro-peritoneal are rarely affected. The abdominal glands were more often affected than the thoracic, and it is curious that most other observers have found the reverse to be the case. Thus Rillet and Barthez made the ratio of thoracic to abdominal 79 to 46; Guthrie 54·5 to 24·6; Still 81 to 59; Shennan 62·9 to 48·7; whilst our ratio works out at 55 to 71. This is interesting because there is little doubt that abdominal tuberculosis is more common in some localities than in others. However, it is not justifiable to base any general conclusion on this fact without further evidence, because the cases were in-patients who may have been selected for admission since they were abdominal in nature.

Of the 107 cases showing tuberculosis of the abdominal glands: (1) 32 per cent. showed no intestinal disease; (2) 29 per cent. showed neither intestinal nor peritoneal disease; (3) 16 per cent. showed abdominal glandular affection with no other tuberculosis at all; (4) 48 per cent. showed both lung and intestinal disease; (5) 10 per cent. showed lung disease with no intestinal ulceration; and (6) 10 per cent. showed intestinal disease without lung affection. In 30 per cent. of the 150 cases the disease seemed to have been primarily abdominal. In this connexion it must, however, be pointed out that infection by the digestive tract includes the swallowing of dirt, dust, and dried sputa, and is therefore not by any means limited to infection with the bovine type of bacillus nor to milk infection.

Of 83 cases showing tuberculosis of the thoracic glands 60 had also lung disease and 23 had none. Thus in 28 per cent. there was thoracic glandular tuberculosis without accompanying lung disease. In those cases in which the disease was limited to the thorax 18 showed lung tuberculosis and 4 none. Therefore in 4 cases there was tuberculosis of the thoracic glands and no evident tuberculosis elsewhere in the body.

In 26 of the 150 cases (17 per cent.) the glands were the only parts affected. In 17 the disease was confined to the abdominal glands; in 4 to the thoracic, and in 5 it affected both groups

The above figures show that disease of either group of glands may occur without lesion of the area drained by them. This occurred in 28 per cent. of the cases with thoracic glands, and 32 per cent. with abdominal glands affected. From the fact that in 28 per cent. of the cases with thoracic glandular disease and 32 per cent. of those with abdominal glandular disease there was no affection of the areas drained by those glands, it appears probable that the disease may spread from the abdominal to the thoracic glands and *vice versâ*. It must be pointed out, however, that tubercle bacilli may pass through a healthy or a slightly damaged mucous membrane without leaving any trace of their entry and yet infect the lymph nodes. Also we must not overlook the spread of tuberculosis by the blood stream in children, in whom generalised tuberculosis is so common.

2. *Pulmonary tuberculosis.*—In many of the cases with cavitation even in those under two years of age the cavities were at the apex, were definitely of a chronic nature, and had evidently been present before other and more wide-spread disease that was often evident. The subjoined table shows that 3 of the infants under two years, and in all 11 of the children had apical cavities.

Chronic Pulmonary Tuberculosis.

	Age-period.				Total.
(a) With cavitation. Site.	0–2	2–5	5–10	10–14	
Apex	3	2	2	4	11
Upper lobe	—	3	2	1	6
Middle ,,	—	1	—	—	1
Lower ,,	1	—	—	—	1
Upper and lower lobes	2	2	1	—	5
Middle and lower lobes	1	—	—	—	1
					25
(b) Without cavitation.					
Apex	—	3	4	—	7
Upper lobe	1	—	—	—	1
Upper and lower lobe	—	1	1	2	4
					12
Chronic Tuberculosis together with Acute Pneumonic Condition.					
Acute broncho-pneumonia	4	3	2	2	11
Acute miliary	1	3	1	2	7
					18
Acute Pulmonary Tuberculosis without Chronic Lesions.					
Broncho-pneumonia	9	7	5	2	23
Miliary	1	2	2	3	8
					31

In five of these cases the broncho-pneumonic consolidation was evidently due to a direct spread from a caseous bronchial

gland, three of the cases in which this occurred being in the age-period 2–5. The greater frequency of broncho-pneumonic changes as compared to miliary at the younger ages is interesting.

3. *Tuberculous meningitis.*—Fifty-one cases showed tuberculous meningitis, a very large proportion in a total of 150 necropsies showing tubercle in some form. It must be noted that cases may have been admitted because they showed meningeal symptoms. The meningitis was associated with: (1) mediastinal glandular tuberculosis alone in 4 cases; (2) mediastinal glandular and pulmonary tuberculosis in 7 cases; (3) abdominal glandular tuberculosis alone in 7 cases; (4) abdominal glandular and pulmonary tuberculosis in 1 case; (5) abdominal glandular and intestinal tuberculosis in 1 case; (6) mediastinal and abdominal glandular tuberculosis alone in 4 cases; (7) bone tuberculosis (3 with pulmonary and 1 with abdominal glandular tuberculosis) in 5 cases; and (8) general tuberculosis in 21 cases. These figures show that, in the class of case admitted to hospital ward, tuberculosis meningitis most often follows on a generalised or miliary tuberculosis, but that it is not uncommonly found as a complication of glandular tuberculosis or of bony tuberculous lesions.

4. *Indurative mediastino-pericarditis.*—Four cases of indurative mediastino-pericarditis occurred in the series. The condition was obviously tuberculous in each case. The ages were between 9 and 13 years. In two of the cases the thoracic condition was accompanied by general adhesive peritonitis, and tuberculous nodules were found in the cerebrum. In one case the heart muscle showed extensive caseating nodules, but death was due not to the heart condition but to meningitis.

Summary and conclusions.—The mortality from tuberculosis in children rises during the first year, reaches its maximum in the second year, and then falls rapidly. Statistics compiled from post-mortem examinations show that in childhood glandular tuberculosis is very common indeed, and in a fair proportion of the cases the disease is limited to the lymphatic glands (17 per cent. of 150 cases). At the Manchester Children's Hospital the abdominal glands are more often affected than the thoracic glands in the ratio of 71 to 55. Though the abdominal glands are more often enlarged than the thoracic the most common condition is that in which both sets of glands are enlarged. Tuberculosis of the thoracic glands (28·1 per cent.) and of the abdominal (32 per cent.) may occur without any accompanying lesion of the lungs or intestine respectively. There may be disease of one part, such as the intestine or lung, with accompanying disease of both thoracic and abdominal glands. Apical tuberculosis is not very rare even in infants, and the form of pulmonary tuberculosis usually designated as chronic phthisis, though not very common, does occur in young children. Chronic cavitation is found even in young children, although in cases dying from chronic pulmonary tuberculosis there is usually a tendency for the disease to spread in the lungs and to become generalised to other parts of the body. Tuberculous meningitis most often follows generalised or miliary tuberculosis, but it not uncommonly occurs as a complication of glandular or bony tuberculous lesions.

LITERARY INTELLIGENCE.—Messrs. J. and A. Churchill announce for early publication the following: "Liquid Air—Oxygen Nitrogen," by Georges Claude, engineer laureate of the Institute of France, translated from the French by Mr. H. E. P. Cottrell. "The Examination of Waters and Water-Supplies," second edition, by Dr. J. C. Thresh, medical officer of health for the county of Essex. "A Laboratory Text-book of Chemistry," Part I., by V. S. Bryant, assistant master at Wellington College. Volume VII. of the new edition of "Allen's Commercial Organic Analysis," rewritten under the editorship of W. A. Davis and S. S. Sadtler. The subjects and authors are as follows: Vegetable Alkaloids, Ptomaines or Putrefaction Bases, by G. Barger; Glucosides, by E. Frankland Armstrong; Non-Glucosidal Bitter Principles, by G. C. Jones; Animal Bases, by A. E. Taylor; Animal Acids, by J. A. Mandel; Lactic Acid, by W. A. Davis; Cyanogen and its Derivatives, by Herbert Philipp.

ACUTE TUBERCULOUS PNEUMONIA: RECOVERY.

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Samuel West speaks of acute tuberculous pneumonia as follows: "This is an extremely rare form of pulmonary tuberculosis. I have only met with it twice in a long series of post-mortem examinations, and have only seen one or two other cases during life in which I believed that state of lungs to exist."[1] To have seen it with recovery adds considerably to the interest, and perhaps justifies the detailing of the following case.

The patient, a girl aged 16½ years, was admitted to the Brompton Hospital as an emergency case on Sept. 25th, 1912. She was under the care of Dr. J. J. Perkins, who very kindly asked me to report her. For a few days before admission she was treated by her family medical attendant, who informed me that during that time she wasted perceptibly, and that she had a daily rise of temperature to about 100·5° F. There was some cough, not very distressing, and very little sputum, in which, however, tubercle bacilli were found. Her mother, with whom she had slept for some time, died from chronic pulmonary tuberculosis on Sept. 20th, 1911. The previous health of the patient had been excellent; for the last month or so only she had felt run down. On admission she complained of nothing, and seemed astonished at the interest being taken in her, for she said she felt, as she certainly looked, quite well. There was a slight cough, but no expectoration. She had no pain, and was not the least dyspnœic. She never had had night sweats nor hæmoptysis, and there was no history of a rigor with the onset of the illness. The temperature was 100·6°, the pulse 100, and respirations 20. The patient's general condition was very good. The chest was well developed and well covered; there was no impairment of movement on either side. The physical signs were as follows: the right lung at the apex, anteriorly and posteriorly, gave an impaired note on percussion, the breath sounds were harsh and vocal resonance was slightly increased. The whole of the lower lobe showed marked evidence of pneumonic consolidation. The percussion note was quite dull, vocal fremitus and resonance were markedly increased, and whispering pectoriloquy was readily elicited. The breath sounds were intensely tubular, and fine crepitations were heard all over the lobe. In the left lung there was evidence of some infiltration at the apex. Lobar pneumonia was at once suggested by these physical signs, but the healthy appearance and the absence of cough, pain, or sputum went strongly against that diagnosis.

The illness fortunately took a favourable course, though the outlook was undoubtedly very grave. The temperature remained up for 14 days. The average evening reading was 101°, the remissions varying from 0·5° to 2°. The maximum temperature was 102·6°. The physical signs altered very little, the râles only becoming coarser in character. Potassium iodide had been given to encourage expectoration, but with no effect. After the temperature had remained normal for several days a diagnostic dose of 1/5 mgm. of old tuberculin was given. A definite reaction resulted, the temperature rising to 100·4°. Locally at the site of the injection there was slight redness. There was no alteration in the signs of the right lower lobe, but at the apex of the same lung there was a distinct focal reaction as shown by the presence of râles in addition to the signs already mentioned. An old tuberculous focus had evidently been reactivated.

Sir William Osler, in a recent lecture[2] at Brompton Hospital on acute tuberculous pneumonia, described three methods of origin of the various types. They were essentially as follows:—1. By infection through the blood channels, the hæmatogenous type as in the case of miliary tuberculosis,

[1] Samuel West: Diseases of the Organs of Respiration.

[2] Sir William Osler: Post-graduate lecture delivered at Brompton Hospital, Nov. 7th, 1912.

and possibly in the broncho-pneumonic type of tuberculous pneumonia. Dr. J. J. Perkins had in his wards recently an interesting acute case which post mortem showed a combination of these two types. There were several racemose patches of soft caseous pus clearly defined, and surrounding them and scattered throughout the lungs were the miliary tubercles. It has been pointed out that to differentiate between these two conditions clinically is almost impossible; further, that except on grounds of clinical accuracy the distinction between them is of little importance.[3] 2. Another method of origin of pneumonic tuberculosis is by infection through the lymphatics. This condition is seen in children where tuberculous glands at the root of the lung, having invaded the substance of the lung, erode one of the large lymphatic vessels. 3. The remaining possible method is by infection through the bronchi. Sir William Osler emphasised the fact that almost every case of the lobar type shows evidence of old tuberculous disease somewhere in the lung affected, but usually at the apex. The caseous focus or gland, it may be, is often seen to be in proximity to a bronchus. When the wall of this bronchus has been eroded through, a quantity of tuberculous material is suddenly set free which infects the lobe or lobes supplied by the bronchus, an acute tuberculous pneumonic condition resulting. Histological evidence points to this cause, and it was noted that pathological specimens in the Brompton Hospital Museum show this feature.

The evidence of old tuberculous disease, as shown by the focal reaction at the apex of the right lung in the case under consideration, suggests that the infection of the lower lobe had been caused in the manner described above. There was now not the slightest doubt as to the tuberculous nature of the pneumonic condition in this patient, for after the positive diagnostic reaction a specimen of sputum was obtained in which tubercle bacilli were found, though not in large numbers. Examination of the fæces and urine was also made later for the presence of tubercle bacilli. The result was positive in the former, but there was no bacilluria. Returning to the progress of the patient—by the end of the third week in hospital the physical signs still were comparatively unaltered. The râles had become loud and crackling in character, suggesting possibly some breaking-down of the lung tissue; the sputum, however, did not increase. After the rise from the diagnostic injection of tuberculin the temperature remained level, the highest at any time being 99·2°. It was quite normal most of the time. There was no cough or troublesome symptom of any kind. The patient continued to put on weight and became increasingly fit, never once looking back. She was able to walk one or two miles daily in the grounds with no discomfort. She was transferred to the Brompton Hospital Sanatorium at Frimley on Feb. 6th, 1913. The physical signs in the right lower lobe were then as follows: there were numerous dry râles throughout, the breath sounds were bronchial, vocal fremitus and resonance were increased but not so intense, the percussion note was still quite dull, and whispering pectoriloquy was heard all over the lobe. The patient gained a total of 21 lb. in weight during her five months' stay in the hospital. She looked, as she felt, perfectly fit.

Another case, also of considerable interest but more by way of contrast, is worthy of description. It is quite a different type from the above, but adheres in almost every respect to the more stereotyped acute pneumonic tuberculosis cases described in the text-books. There is hesitation, however, in labelling it because of the fact that tubercle bacilli were not found, but the onset and other features, as will be seen, can leave little doubt as to the nature of the disease. It further shows the difficulty of diagnosis in such cases.

The patient was a married woman, aged 24, with three children, the youngest being two years old. There was no family history of tuberculosis. Her previous health had been good up to four months ago, when she began to ail. On June 20th, 1912, she went to Paddington Tuberculosis Dispensary. Dr. F. S. Walker has very kindly supplied me with particulars of her condition at that time. The patient looked ill-nourished. The chest showed deficient expansion, more particularly on the left side. The right apex gave a dull note on percussion, while at the left there was also dulness, but more marked and associated with harsh breath sounds. The temperature and pulse were normal. The sputum was examined twice for tubercle bacilli, each time with a negative result. A diagnostic injection of 1/5 mgm. of old tuberculin was given. There was a marked local reaction, slight general reaction, the temperature rising to 99·2° F., but no focal reaction. Dr. Walker had started the patient on a course of tuberculin Beraneck, of which she had seven injections. Her last visit to Paddington Dispensary was on Oct. 28th, and seven weeks after, on Dec. 16th, she was admitted to Brompton Hospital as an emergency case.

Three weeks before this date the present illness had set in suddenly with a rigor and cold sweats. There was severe pain in the left side and a very bad cough. The sputum became abundant, but never at any time was it rusty or tinged with blood. The patient's condition on admission was as follows. She was emaciated and looked extremely ill, her face was pallid, and she was perspiring profusely. There was marked dyspnœa, but she did not complain of any pain. The temperature was 100·4°, the pulse 92, and respirations 20. The cough was not troublesome, but the expectoration was very plentiful and was of a peculiar pale-greenish colour, the "grass green" often noticed in such cases. The physical examination revealed a state exactly similar to that of the lungs in the preceding case, except that the mischief was on the left instead of the right side. At the left apex the note was dull, vocal resonance increased, and the breath sounds harsh. The lower lobe was distinctly in a state of pneumonic consolidation. There was the very dull note, the greatly increased and high-pitched vocal resonance, with whispering pectoriloquy. The breath sounds were intensely tubular, and throughout the whole lobe were heard loud crackling, almost bronchiectatic, râles. In the right lung there was evidence of some infiltration at the apex, and conducted signs were heard at the base. It may not be amiss at this point to draw attention to the fact that, though whispering pectoriloquy was elicited in both these cases, that sign was not taken as indicating the presence of cavitation as it commonly is. It is probably not sufficiently recognised that consolidation of the lung, fibroid or exudative, invariably produces distinct whispering pectoriloquy.[4] The temperature in this case remained about 100° for the first three days after admission, then gradually settled, with remissions of 1°–2°, to normal. The highest temperature reached was 101°. The sputum was examined nine times for tubercle bacilli, and the fæces and urine also were examined, all with negative results.

The condition of the patient gradually improved. By the end of the second week the temperature was quite normal. As regard the physical signs the only change noted was in the character of the râles, which cleared up considerably and became finer; the other signs remained unaltered. The sputum was still abundant but decreasing, and still had the characteristic colour. After the temperature had remained normal for one week a diagnostic injection of 1/10 mgm. of old tuberculin was given with no result other than a slight local reaction. Doses of 1/5, 1/2, and 1 mgm. were then given at intervals of a few days, in each case without producing any reaction. The patient had evidently acquired tolerance either as the result of chronic autotoxic tuberculosis or of the tuberculin treatment already given.[5] On her discharge from the hospital the patient looked exceedingly well. She had gained 9½ lb., and had been up all day for some time and exercising in the grounds. At the left base all that could be found were fine crepitations increased by coughing; the note was still dull, but the breath sounds and vocal resonance were much less intense. There was very little sputum, and no cough or pyrexia.

As regards treatment, simplicity and careful nursing were the features. During the febrile period both patients were on "absolute rest." This at Brompton and Frimley, as introduced by Paterson, means treating the patients as if they were cases of enteric fever in every respect except as regards diet. After the temperature had been normal for a week they were allowed to sit up in bed. They were next allowed up one or two hours, and if the temperature did not rise above 99° were gradually allowed up an increasing length of time till they were up all day and walking in the grounds. Expectorants or morphia linctus were given as

[3] Powell and Hartley: Diseases of the Lungs.

[4] Samuel Gee: Auscultation and Percussion.

[5] Riviere and Moriand: Tuberculin Treatment.

the symptoms indicated. Throughout the afebrile period tuberculin Beraneck was administered in small doses, none being above 0·8 c.c. of No. 6 dilution. It never produced a reaction, and certainly, coupled with other attendant factors, gave the impression that it helped to increase the resistance of the patients and enabled them against big odds to fight their way to the satisfactory recovery they have made.

THE TECHNIQUE OF EXCISION OF CERVICAL RIBS.

BY A. S. BLUNDELL BANKART, M.C. CANTAB., F.R.C.S. ENG.,

SURGEON TO THE ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, THE HOSPITAL FOR EPILEPSY AND PARALYSIS, MAIDA VALE, ETC.

THE patient, a female aged 33, was admitted to the Maida Vale Hospital under the care of Dr. Wilfred Harris in January, 1912, with the following history. Her symptoms began more than three years ago with pain in the right shoulder, which she had for two years before she sought medical advice. The pain was worse on exertion. She also had "pins and needles" sensations in the ulnar side of the right forearm and hand, but the distal symptoms were slight compared with the pain in the shoulder. She was first treated by hot-air baths and electricity for "neuritis," and while having this treatment she developed pain in the neck, which was very much worse than the original pain in the shoulder. She was then sent to a hospital, where an operation was performed for cervical rib in June, 1910 (18 months before I saw her). A transverse incision was made very low down on the right side of the neck; the rib was not removed, but "a small spike of bone was chipped off from somewhere"—presumably the tip of the rib. Her symptoms were aggravated by this procedure. On admission to the Maida Vale Hospital 18 months later she had continual pain in the right side of the neck and over the right shoulder. The extremity of the cervical rib was palpable and very tender. There was no wasting of the hand muscles. The skiagram showed a well-marked cervical rib on each side, but there were no symptoms referable to the left. On Jan. 8th, 1912, I removed the right cervical rib through a *posterior* incision.

Operation.—An incision about 4 inches long was made parallel to, and about an inch from, the spinous processes, with its centre opposite the seventh cervical vertebra. The trapezius was divided in the same line and drawn outwards so as to expose the deep muscles at the back of the neck. The outer margin of these deep spinal muscles then led straight to the transverse processes, and so to the cervical rib at its origin from the seventh cervical vertebra. The rib was divided at once close to the vertebra, and, being then *movable*, it was dissected out from the soft parts with the greatest ease. The trapezius was sutured with catgut, and its limited division gave rise to no subsequent weakness or other disability. There was practically no bleeding, and the wound was closed without drainage. The patient was relieved of all her symptoms and has since remained perfectly well.

As regards ease, rapidity, and *safety*, this operation compares very favourably with those that are usually performed for cervical ribs. Two operations are in common use: (1) the traditional operation through an incision on the front of the neck just above the clavicle; and (2) that through an incision at the side of the neck. The first of these was originally an exploratory operation. But nowadays cervical ribs are always diagnosed with certainty, by X rays, before operation. A cervical rib is a process of bone attached to the spine (seventh cervical vertebra), and the aim of the operation is to get at its vertebral attachment to divide it. It seems strange, therefore, that one should elect to approach it through an incision on the front of the neck, about as far away from the spine as possible. In operating from the front, one has to traverse nearly the whole thickness of the neck in order to reach the spine, and the field of operation is surrounded by important structures which cannot be retracted with impunity.

In both the anterior and the lateral operations the rib is immovably fixed, behind, up to the very last stage of the dissection. Consequently, all the soft parts have to be separated and drawn away *from* the rib before it can be resected. This manipulation and retraction of important parts are responsible for nearly all of the unfavourable sequelæ which may follow these operations. The difficulties and dangers, and therefore the accidents and failures, of operations on cervical ribs are due almost entirely to a technique which necessitates manipulation and retraction of the surrounding parts from a rigid immovable structure.

The great feature of the posterior operation is the early mobilisation of the rib. In this operation the rib is divided at the very beginning of the deep dissection; all pre-existing tension on the soft parts is at once relieved; and, as the rib is now freely movable, it is dissected *from* the soft parts with the greatest ease, and without risk of injury to any important structure. By displacing the rib the manipulation of other parts is reduced to the minimum. As the rib is divided close to the vertebra in full view of the operator, there is no fear of its removal being incomplete. The limited division of the trapezius close to its origin from the spinous processes gives rise to no subsequent disability if it is sutured at the end of the operation, and the incision is too far back to interfere with its nerve supply or with that of the rhomboids. In this operation the rib is approached by the shortest possible route, and the dissection is then directed solely to the structure to be removed.

The case was shown at a meeting of the Clinical Section of the Royal Society of Medicine on Feb. 14th, 1913.

Devonshire-street, W.

CASE OF

EPITHELIOMA OF THE AURICLE AND CERVICAL GLANDS; REMOVAL OF AURICLE AND GLANDS.

BY NORMAN PATTERSON, M.B. EDIN., F.R.C.S. ENG.,

ASSISTANT SURGEON, THROAT HOSPITAL, GOLDEN-SQUARE; REGISTRAR, THROAT DEPARTMENT, LONDON HOSPITAL; SURGEON, THROAT AND EAR DEPARTMENT, CROYDON GENERAL HOSPITAL.

THE patient was a man aged 61. He said that his right ear had been injured six months previously by a piece of wood striking it. The outer aspect of the auricle presented an indurated non-ulcerated area, raised above the surface and of about the size of a shilling. It was situated above and behind the orifice of the meatus, but did not actually encroach upon it. Under the microscope the growth showed the structure of a typical epithelioma. The glands in the upper part of the right anterior triangle were definitely enlarged, and a very considerable mass lay high up underneath the sterno-mastoid.

An operation was performed in May, 1912. The auricle, together with the skin and soft structures over the mastoid and the membrano-cartilaginous part of the meatus, was removed in one mass. It was thought there might be trouble with the jugular vein where it was overlaid by enlarged glands close up to its exit from the skull, so I determined to expose the lateral sinus and temporarily occlude its lumen. This was done in the usual way by removing a considerable portion of bone with hammer and chisel. Ribbon gauze was then packed between it and the skull wall. In this way the blood flowing into the jugular vein from the cranial cavity was all but cut off. From the lower limit of the wound left by removal of the auricle an incision was made along the whole length of the anterior border of the sterno-mastoid. The internal jugular vein was now exposed low down in the neck and divided between ligatures. A large portion of the sterno-mastoid was removed, and this, together with the glands, fascia, and jugular vein, was dissected from the carotid artery and other structures in an upward and forward direction. The common facial vein was early secured. The glands were intimately adherent to the jugular vein almost up to its emergence from the foramen. The vein was ligatured and

divided close up to the base of the skull. The spinal accessory nerve ran through the glandular mass and had to be sacrificed. It was also found necessary to remove a portion of the parotid gland, which necessitated cutting some twigs of the facial. Since there were shotty glands low down in the neck in the region of the upper part of the brachial plexus, a dissection of this region was made, and the fascia and glands removed. The wound was drained through a separate posterior opening. The neck healed by first intention. There was a large cavity in the region of the ear which rapidly filled with granulations, and afterwards a skin graft was applied. The patient had facial paralysis for some time, but that has now nearly recovered. The external auditory meatus has been kept as patent as possible by a piece of rubber tubing.

Mr. S. Gilbert Scott, of the London Hospital, has very kindly made numerous applications of X rays as a prophylactic measure. The patient has had two courses of treatment. The dosage and thickness of the aluminium filter have been varied to allow the rays to act both on the deeper and more superficial structures. An interval of a week has elapsed between each administration. So far there is no recurrence. Only 11 months have elapsed since the operation and it is therefore too early to judge as to the ultimate result.

Points of special interest in the case are: 1. Such extensive glandular involvement occurring in association with a comparatively limited growth on the auricle; cancer of the auricle usually shows signs of fairly marked local spread before the glands are much involved. 2. The history of a local injury six months previously is of some interest. 3. I should especially like to lay emphasis on the preliminary occlusion of the lateral sinus practised in this case. This method I have not seen described, and I intend to employ it again in connexion with removal of enlarged glands in cases of malignant disease of the pharynx, tonsil, &c. In these cases it is all important that a thorough clearance of lymphatic structures right up to the base of the skull be carried out, and this is no easy matter if enlarged glands lie along the upper course of the jugular vein. The preliminary exposure of the sinus need not take more than from 5 to 10 minutes.

A skin incision similar to that employed in the mastoid operation, or one with its convexity forward is made over the mastoid process. The periosteum is separated from the upper part of the process and an opening made in the skull three-quarters of an inch behind the centre of the external auditory meatus. This will be effected more easily, I think, with the hammer and chisel than with the trephine. The chisel must be applied obliquely to avoid injury to the wall of the vein. Once the sinus is exposed the opening is enlarged in a backward and upward direction to allow the gauze packing being inserted. In exposing the sinus its varying position must be kept in mind, and also that it may be overlaid by dense or cellular bone. It will, as a rule, be unnecessary to open the mastoid antrum. If the incision over the mastoid be made one with that in the neck the structures in the region of the digastric fossa will be more easy of access. In most cases, after removing the tampon, the soft tissues would be allowed to fall over the cavity and sutured in position. The time spent in this little introductory operation will be amply repaid when one comes to deal with the upper part of the internal jugular, for one can then proceed with confidence, knowing that a nick or tear in the vein will not mean flooding of the wound with venous blood. This is a most disconcerting accident and might easily occur in cases where the vein is adherent to enlarged and indurated glands. Much time may be wasted, and infected tissues unnecessarily cut into, in trying to dissect the glands off the vein. It is better practice to clear away the glands and vein together, and if necessary cut the latter across before applying a ligature. The risk of placing a tampon on the lateral sinus is practically *nil*. I have heard of the jugular vein being torn or injured close up to its exit from the skull. In such a case, after stopping the hæmorrhage temporarily with firm packing, the sinus might be exposed, occluded, and the operation in the neck proceeded with.

If this method were used in combination with a clamp on the carotid, as carried out by Crile, the field of operation could be rendered practically bloodless.

Brook-street, W.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN.

Exhibition of Clinical Cases and Pathological Specimens.

A MEETING of this section was held on March 28th, Dr. J. WALTER CARR, Vice-President, being in the chair.

Dr. FREDERICK LANGMEAD showed: 1. A case of Tremor (? Congenital). The patient, a girl aged 10 years, had definite tremor of both upper limbs, moderate in amplitude. It interfered somewhat with school work, but otherwise caused no discomfort. It had been noticed particularly during the last two to three years, but probably dated from infancy. There were no signs of organic nervous disease. 2. A case of "Nervous Cretinism." The patient was a boy, aged 10 years. He was an undersized and mentally deficient child who first attended the Hospital for Sick Children, Great Ormond-street, when 7½ years old, and then exhibited the usual signs of cretinism to a moderate degree. He could not sit alone, stand, or talk, and was "dirty in his habits." His appearance was characteristic. Under thyroid treatment he had improved considerably in his general condition and could walk, although badly, and became clean in his habits. His vocabulary was still very limited and pronunciation imperfect, only a few simple words being used and these in a monotone. He had lost most of the aspect of cretinism. The feature of special interest was a coexisting cerebral diplegia affecting chiefly the legs. These were stiff, adducted, and their deep reflexes were exaggerated. The plantar response was sometimes definitely extensor. The arms were little, if at all, affected; the triceps jerks were brisk and (?) slight rigidity was present. He stood in the knock-kneed position, with feet abducted, and walked with adducted legs, but without scissor-leg progression. The thyroid could not be felt. Dr. Langmead said that he had called the case "Nervous Cretinism" after Major Robert McCarrison, I.M.S., who had described the association of cretinism with spastic paralysis in his study of endemic cretinism in the valleys of Chitral and Gilgit in India. That writer regarded the paralysis as part of thyroidal inadequacy, and had obtained some success with thyroid therapy in such cases. 3. A case of Defective Ossification of the Skull in a boy. There was marked pulsation over the posterior end of the interparietal suture. This was apparently cerebral in origin and transmitted through a small foramen.

Dr. F. G. CROOKSHANK and Mr. SIDNEY A. BOYD showed a case of Congenital Thoracic Deformity. The patient, a boy aged 6½ years, was the subject of congenital thoracic deformity affecting the right side. There was a large depression in the upper part of the front of the chest, and an oval gap could be made out in the bony parietes, measuring 4 inches in its long diameter (which passed obliquely downwards and forwards from the axilla) and 3 inches transversely. The defect was apparently due to absence of the anterior portions of the second, third, and fourth ribs. The fourth rib appeared to join the fifth. The sternum was asymmetrical, and the right upper costal cartilages, which were attached to the sternum, were bent backwards. There was a marked hernia of the right lung. The clavicle and scapula were smaller on the right side than on the left. There was scoliosis of the dorsal vertebræ, convex to the right. The pectoralis major was fairly well developed, but was not so large as on the left. The pectoralis minor and the upper part of the serratus magnus were apparently absent. There was some depression of the corresponding area of the left side of the chest, but no bony defect. The exhibitors said that the condition appeared to fall within the category described by Dr. J. Thomson in "Teratologia" (January, 1895) as "congenital thoracic deformity." As in Dr. Thomson's cases, if the arm were flexed at the elbow and the hand placed on the front of the opposite shoulder, the deformed area was found to be almost exactly covered by the upper arm. So far, then, Dr. Thomson's suggestion, that

this kind of deformity was due to intra-uterine malposition, was supported.

Mr. A. S. BLUNDELL BANKART showed a case of Achondroplasia. The patient was a girl aged 7 years. The parents were first cousins. The condition was first noticed in infancy. The child had been treated for rickets when 16 months old, and the treatment had been continued for three years without effect. She was stunted in growth. The head was normal, not rickety. The teeth were good, dentition not being delayed. The chest was narrow, the sternum being prominent (pigeon-breasted). Very slight beading of the ribs was present, and a well-marked horizontal sulcus traversed the lower part of the chest. Lordosis existed. Upper extremities: great enlargement of epiphyses; skiagrams showed marked irregularity and "cupping" of epiphyseal lines; diaphyses stunted. Extreme laxity of wrist-joints was present, yet she had a good grip and could use the hands well. There was looseness of the elbows; the head of the radius on each side could be dislocated and replaced with ease. The lower limbs were very slightly affected, the epiphyses being hardly, if at all, enlarged; the diaphyses were not stunted. There was slight genu valgum which had improved by treatment.

Mr. LIONEL E. C. NORBURY showed a case of Circumscribed Serous Meningitis. The patient was a male child, aged 13 months, admitted to the Belgrave Hospital on August 6th, 1912. There was a history of convulsions 15 days previously, followed by right facial paresis and tremor of the right hand. No history of trauma was obtained. An abscess on the left side of the neck had been incised two months before admission, and discharge from the right ear occurred at the same time. On admission he was seen to be a well-nourished but very pale child. There was a fine, regular tremor affecting the right arm and hand, right leg, right side of mouth, and also the tongue and lower jaw. Right facial paresis and slight convergent strabismus were present. The knee-jerks were present and equal, not exaggerated. The abdominal reflexes were present. Lumbar puncture failed to withdraw fluid. No changes were seen in either fundus oculi. At an operation the left parietal bone was trephined over the centre of the Rolandic area, and the opening in the bone enlarged so as to freely expose this area. The dura was incised crucially and the pia-arachnoid found to be very swollen and œdematous. The pulsation was feeble. The tremor gradually disappeared, first from the leg and then from the arm and face. The wound healed by first intention. Cerebro-spinal fluid collected under the scalp-flap and was evacuated every few days (five times in all) until it ceased. Nine days after the operation there was no sign of tremor. The patient was seen on March 20th, 1913, when the general condition was found to be very good. A very slight facial weakness remained. In the region of the craniotomy wound there was a moderate degree of bulging.

Dr. R. C. JEWESBURY showed a case of Acute Poliomyelitis affecting the Muscles of both Hands. The patient, aged 12 years, had an attack of "influenza" six months ago, being very feverish for two days; she then became very weak in the right arm, and to a less extent in her back and right leg. She showed marked wasting of the muscles of both hands and also wasting of the muscles of the right arm and shoulder. The triceps was the muscle most affected in the arm.

Dr. F. PARKES WEBER showed a case of Congenital Eversion of the Great Toes and other Abnormalities. The patient was a healthy-looking female baby aged 7½ months. Both great toes were everted and overlapped by the other toes, and the deformity thus produced suggested at first sight the eversion of the great toes not rarely met with in elderly persons, often associated with ulnar deflexion of the fingers and often wrongly ascribed to the wearing of badly shaped boots or shoes. Both the child's thumbs were turned inwards across the palms, and there was also an abnormal projection on the left side of the neck. The patient, who seemed otherwise quite normal, was the only child of healthy parents, both young. There was no history of any similar malformation in any other members of either the mother's or the father's family, nor was there any definite history of "maternal impression."

Dr. LEONARD G. PARSONS showed Sections from a Case of Progressive Muscular Atrophy (Werdnig-Hoffmann Type) in a male child aged 3 years. He had been normal until aged 10 months, when progressive wasting began. This was first observed in the shoulder muscles and the upper part of the thigh. Ability to hold the head erect was lost in the third year. On admission to hospital the cranial nerves were normal. There was almost complete flaccid paralysis of the shoulder-girdle muscles, double wrist-drop, and supination was impossible. Movements of the fingers was possible but feeble. The lower limbs showed wasting, chiefly above the knees, and contractures, the only movements possible being flexion and extension of the ankles and toes. The abdominal and intercostal muscles were paralysed. He was unable to sit up alone or hold the head erect. Scoliosis was present in the lower dorsal and lumbar regions. Knee-, ankle-, and arm-jerks, and abdominal reflexes were absent. There was no sensory change. The cerebro-spinal fluid was normal. There were marked diminution of electrical excitability and slight reactions of degeneration. Death was due to broncho-pneumonia. *Post mortem.*—Subcutaneous fat was present in fair amount and masked some of the muscular atrophy. The affected muscles were very pale and atrophic, the diaphragm by contrast being a good colour. The muscles showed fibrosis. Some of the muscle fibres were larger than normal and had a rounded contour; the majority of the altered fibres were smaller than normal (0·01 mm. and less), and some were on the point of complete atrophy. The small fibres showed an enormous increase in the number of nuclei. Striation was well preserved and muscle spindles were normal. Many fibres showed fatty degeneration. The anterior nerve roots were smaller than normal and showed overgrowth of fibrous tissue. Nissl sections of the cord showed a striking diminution in the number of cells in the anterior horn, about one-third the normal number being present. The cells were also smaller than normal and their processes less marked. Some showed a degree of chromatolysis. Marchi sections showed no change.

Dr. PARSONS also showed specimens of Diffuse Sarcomatosis of the Brain and Spinal Cord. They were from a child aged 2 years. Symptoms started four months before death. The initial symptoms were headache and violent screaming attacks with gradually failing vision, and at the end of three months the child was blind. Walking was normal until 14 days before death. Hearing, speech, and intelligence were normal until the onset of the final pressure signs, which commenced 10 days before death. At the post-mortem examination the cord was found to be ensheathed throughout its length by growth, which also invaded its posterior aspect. The growth extended on to the nerve-roots and there were many growths on the cauda equina. It extended outside the spinal canal along the root of the lumbar plexus. The Gasserian ganglion and the ganglia of the ninth and tenth cranial nerves were much enlarged, and the seventh and eighth nerves were thickened by an extension of the growth. Multiple small growths were present over the base of the brain arising from the pia-arachnoid. Hydrocephalus was marked. The primary growth was in the cerebellum, and had invaded, distended, and completely filled the fourth ventricle; it had also blocked the iter, and then was continued as a filmy gelatinous covering over the ependyma of the third ventricle. Microscopically, the growth was a mixed-celled (chiefly small-celled) sarcoma, and its method of spread was due to "infection" of the cerebro-spinal fluid.

Mr. SEYMOUR G. BARLING showed a Hair-ball removed from the Stomach of a child. The specimen consisted of a felted mass of hair and string, and presented an exact cast of the stomach, showing the pyloric canal, pyloric antrum, and fundus. It was removed from a female child aged 7, of normal intelligence, who for some days before operation had suffered from pain in the upper abdomen and vomiting. On examination a tumour exactly resembling the shape of the stomach presented itself in the epigastrium and moved up and down on respiration. The shape of the tumour, together with a history of hair biting, extending over several years, and the occasional passage of string, tape, &c., in the motions, led to a direct diagnosis by Lieutenant J. L. Ritchie, R.A.M.C., by whom the case was first seen. On gastrotomy being performed, the specimen was easily removed and the patient made a satisfactory recovery.

HUNTERIAN SOCIETY.

The Uses of Tuberculin.

A MEETING of this society was held on March 26th at St. Bartholomew's Hospital (Library).

Dr. ARTHUR LATHAM opened a discussion on the Uses of Tuberculin with an interesting general survey of the subject. He gave reasons why tuberculin could not be relied on without corroborative evidence in the diagnosis of tuberculosis. The von Pirquet reaction was seldom of service in this direction after the age of 7, but the intensity of the reaction was of service in estimating the dosage and spacing of doses in a course of tuberculin, and the absence of reaction was of some value in excluding tuberculosis. The value of a reaction after hypodermic injection of old tuberculin was also subject to limitations. The important thing was a focal reaction, provided that this was supported by other evidence. Dr. Latham described the class of case in which it was inadvisable to use tuberculin as a diagnostic, and gave his reasons. As to the value of treatment by tuberculin in pulmonary tuberculosis Dr. Latham gave his own impressions, together with the evidence of German and American observers, and especially called attention to the fact that with the use of tuberculin at the King Edward VII. Sanatorium the number of patients who lost their tubercle bacilli had been increased by 17 per cent. over what was obtained merely by sanatorium treatment. The value of tuberculin and the methods of administering it in the various manifestations of tuberculosis, such as pleurisy, peritonitis, lupus, and disease of the glands, joints, and bones, were discussed. It was pointed out that if the real nature of pleurisy in early adolescence was recognised and the case properly treated by sanatorium methods and tuberculin therapy probably a considerable number of cases of pulmonary tuberculosis could be avoided. As to the particular form of tuberculin to use, results showed that this was of no great importance; the chief thing was for the observer to know the value and the limitations of the particular brands he used. Dr. Latham drew attention to the value of the new tuberculin in febrile conditions or cases in which autoinoculation readily occurred, and said that in many chronic cases sensitised B.E. was preferable to the ordinary bacillary emulsion. He had never been convinced of the truth of the statement that bovine preparations should be used in lung infection and human in examples of "surgical" tuberculosis. The result of scientific examination went to show that a large proportion of surgical tuberculosis was due to infection from human sources, yet the upholders of cross vaccination treated all cases of this form of the disease with human preparations. The fact that great improvement followed in many of these cases showed that cross vaccination was not essential.

Dr. G. A. CRACE-CALVERT first wished to emphasise what Dr. Latham had said about pleurisy. It should never be treated as of no importance, as more often than not it was followed sooner or later by definite disease. Sanatorium and tuberculin treatment were complementary, the latter providing stimuli to the production of antibodies, and the former the necessary powers of response. The majority of patients proved suitable for the administration of tuberculin if they were carefully watched first and then given very small doses to begin with. He always used the bacillary emulsion, as it nearly corresponded to an ordinary vaccine, was more slowly absorbed, and therefore made a greater and more lasting production of antibodies. He used the intensive system, as he thought that it increased the tolerance and abolished the sensitiveness. When one always used the same site for the injections it sometimes became difficult to inject the dose—apparently owing to the inflammatory condition produced, and when this was the case a general reaction was particularly liable to occur. Even if tuberculin did aid in the production of cavities it was often a good thing, as he considered it preferable to have simply a ring of scar tissue round an empty cavity than a mass of dead tissue containing virulent or living bacilli, and he did not think that this cavity formation made more liability to hæmorrhage, as the focal reaction tended rather to the obliteration of the blood-vessels. Patients treated with tuberculin certainly lost the bacilli from their sputum more readily than those not treated, and so the tendency to relapse was greatly reduced.

Dr. J. W. LINNELL found himself opposed to a careless and indiscriminate use of the subcutaneous test for the following reasons: (*a*) The danger of lighting up quiescent disease; (*b*) the increase of sensitiveness to tuberculin often caused, leading to difficulties in treatment later; (*c*) the fact that even should a focal reaction result there was often nothing to show whether the focus was active or quiescent. In cases of suspected pulmonary tuberculosis the same evidence could be obtained without danger by using tuberculin in therapeutic doses. All the tuberculins were, he thought, broadly speaking, the same tuberculin and the important factor might well be the amount of autogenous tuberculin washed out into the circulation by the focal reaction. He objected to the wilful causation of reactions and was altogether in favour of the gentle, gradual method of use. With regard to the type of case suitable for tuberculin, the all-important factor was the resistance of the individual. In the treatment of early cases, especially where there was any suspicion of activity, recourse should not be had to tuberculin till after a course of absolute rest and other sanatorium methods. If the symptoms subsided, tuberculin should then be started cautiously. The maximum dose differed with the individual, and there was no point in striving to attain to any particular dose of any particular brand of tuberculin. The following points should be noted as the results of treatment: (*a*) The fact that nothing dramatic occurred, tuberculin merely imitating the natural processes of self-healing; and (*b*) the fact that nothing like complete immunity was conferred by tuberculin. Tuberculin, he added, was of great use in suitable cases, if sanely administered, but should never be looked upon as a substitute for other forms of treatment, while sanatoriums were indispensable adjuncts in any efficient dispensary system.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

Nephrectomy.—Location of Pus in the Hand.

A MEETING of this section was held on Feb. 21st, Mr. R. D. PUREFOY, the President, being in the chair.

Mr. C. ARTHUR BALL read a paper on Nephrectomy. He pointed out that the improved methods of diagnosis had greatly reduced the mortality, but there still remained a risk attached to nephrectomy which was probably greater than that of any other major operation—the danger of hæmorrhage. He stated that enough attention was not attached to this danger in the teaching of the subject, and expressed the opinion that the kidney could be more readily reached from the front by an iliac extraperitoneal incision, like that recommended for exposing the lower part of the ureter. This incision could then be extended upwards and backwards in the direction of the external oblique fibres if more room was needed. He stated that this was the incision he always employed, and pointed out that by it the vessels of the pedicle could be readily exposed, and any abnormal vessels could be easily seen and dealt with more safely and easily than by the lumbar incision. In his opinion lumbar nephrectomy should be classed with lumbar colotomy and given up.—Mr. R. C. B. MAUNSELL said that when a student he had seen cases of death from hæmorrhage, but he never had a case himself, and this he attributed to the fact that where he found a kidney very adherent and matted from chronic disease he adopted subcapsular nephrectomy. When the kidney was very adherent he thought it was useless to try and get it out by any other method.—Sir JOHN LENTAIGNE considered that the efficiency of the other kidney was the most important point to look into, and it was always the one that he weighed before operating on a kidney. The fear that the other kidney might be out of use was the thing which should influence the operator most in his procedure. He thought that the cystoscope alone would not tell at once whether the other kidney was working, nor would segregation of the urine tell. At one time it was thought that by diverting the urine from each ureter into separate channels one could tell whether the other kidney was functioning or not. Ureter catheterisation was the only reliable test, but unfortunately this was a procedure which could not always be

easily carried out. Even the most expert men had found it impossible to use a ureter catheter in every case. A procedure which he found efficient was a double incision. By cutting down on both kidneys and palpating one was able to tell whether the kidney and ureter on the opposite side were all right, and the patient appeared to be nothing the worse.—Mr. KENNEDY considered it a very sweeping thing to condemn the lumbar operation, as by combining the incision at right angles with lumbar incision the largest kidney could be taken out. He referred to the use of a clamp for preventing hæmorrhage. If the pedicle of the kidney was taken up and clamped before the vessels were isolated the latter could afterwards be taken up and tied individually. It was, he said, astonishing the amount of room provided by the freeing of the last rib.—Mr. PEARSON said he had seen two or three nephrectomies by the incision described, and to his mind it was the ideal procedure. The ease with which the operator could see what he was doing was very remarkable.—Mr. H. STOKES said that the practice of a surgeon who had performed 40 nephrectomies without a single death was not to tie himself to any particular incision.—Mr. BALL, in reply, said he generally started by laying the patient on the back, inclining the body a little to one side. He usually started with a small incision of about four or five inches, and if there was not room enough he extended it higher up. His object was not so much to try and convert those who had performed lumbar nephrectomy satisfactorily as to show that if students were taught that this anterior incision was a much safer method it would be an advantage.

Mr. A. A. MCCONNELL read a paper on the Location of Pus in the Hand. He pointed out that there were definite spaces in the hand independent of the tendon sheaths in which pus might collect, that the diagnosis of pus in these situations could be made, and that special incisions were required for adequate treatment. He adopted the nomenclature introduced by Kanavel, of Chicago, and in the main advocated the treatment employed by him. Clinical cases were cited, however, which went to prove that adequate drainage of the middle palmar space could be carried out by placing an incision behind the web of one or more of the fingers and introducing a drainage tube. This incision avoided the digital vessels and nerves, and proved as effective as Kanavel's palmar incision.—The PRESIDENT said that the fact that these injuries to the hand were so frequent, and might have such disastrous results if not well treated, invested the subject with the greatest importance.—Mr. L. GUNN said he had felt for a long time that in hospital practice septic fingers and hands were left very much to the residents and house surgeons, and that very disastrous results were often experienced where incisions were possibly made in wrong positions.—Mr. CRAWFORD said that a point of importance was that this method of making an incision of the web of the finger was a new one, and had only been performed by Mr. McConnell himself. He had only one case of the kind since he had learned the method, and in that case, although the whole hand was œdematous, he determined to try drainage through incision of the web of the little finger, and the result was very good, all the symptoms subsiding in three or four days.

SECTION OF OBSTETRICS.

Instrument for Minimising Risk of Septic Infection during Operations.—Exhibition of Specimens.—Uterine Rupture.—Gonorrhœal Vaginitis Treated by Vaccine.

A MEETING of this section was held on March 7th, Dr. HENRY JELLETT being in the chair.

Mr. J. SPENCER SHEILL exhibited an Instrument designed to Minimise the Risks of Septic Infection during certain Gynæcological Operations, and explained its working. In reply to Dr. Jellett he suggested that it would be found useful for the introduction of drainage after subtotal hysterectomy in cases where there was a suspicion of sepsis.—Dr. JELLETT said that personally he would be more inclined to drain through an opening in Douglas's pouch than through the cervix. He thought that the apparatus would be very suitable for this purpose.—Mr. SHEILL said that the object he had in designing the instrument was to avoid the necessity for pulling the probe back after the gauze drain had been introduced. In some cases posterior fornix drainage was not indicated; for instance, in uterine rupture cervical drainage would be indicated, and his instrument would, he considered, be the safest way to drain.

Dr. JELLETT exhibited specimens taken from two cases of Genital Tuberculosis. The first involved the tubes, uterus, and rectum. The patient was an 8-para, aged 58. She complained of hæmorrhage for five months, with pains in the lower abdomen, as a rule, before the hæmorrhage started. She was passing fæcal matter through the vagina. The disease was first thought to be malignant, but an examination of uterine scrapings showed it to be tubercular. On opening the abdomen the uterus was found to be studded with tubercle, and was adherent to the posterior pelvic wall. There was a tumour of the size of a hen's egg in relation to the rectal wall, and adjacent to the uterus. The rectum was resected without separating it from the uterus, which was removed at the same time. The reason for resecting the rectum was that it appeared to be involved in the tumour. On examination of the latter, however, it proved to be a mass of fat and of tubercular growth in the mesentery of the rectum. The lumen of the rectum was considerably reduced. The cavity inside the uterus contained some breaking-down tubercular material. An end-to-end anastomosis of the rectum was done, and held for 11 days, and then began to leak. In the second specimen there was tubercular disease of the tubes associated with carcinoma of the ovaries in a patient aged 32. Dr. Jellett invited opinion as to whether tubercular disease of the tubes was commonly accompanied by tubercular disease of the uterus, and got well after removal of the tubes. Some authors stated that this was usual, but he had previously never found tubercular disease of the uterus that did not eventually lead to serious complications.—Dr. E. HASTINGS TWEEDY said that he could only say that whether the uterus was or was not involved, he had known patients to get well after resection of tubes. While tubercular disease of the tubes was frequently seen, disease of the uterus was rarely met with.—Mr. SHEILL said that he had seen a good number of cases of disease of the tubes of tubercular origin, but only one case of definite tubercular disease of the uterus.—Dr. JELLETT, in reply, suggested, with a view to throwing further light on this important subject, that all operators should examine scrapings from the uterus in all cases of tubercular salpinx.

Mr. SHEILL then read clinical notes of Two Instructive Cases of Uterine Rupture, and these were discussed by Dr. TWEEDY, Dr. D. G. MADILL, and Dr. JELLETT.

Dr. GIBBON FITZGIBBON read a paper on Gonorrhœal Vaginitis treated by Vaccine. He recorded six cases treated by vaccine, five with good results; the sixth had appeared cured, but relapsed or else had been reinfected. He considered that vaccines to be effective should be made from cultures grown fresh from the human host, but that they need not be autogenous. Local treatment, in combination with vaccine, was advisable, and probably necessary—certainly in the chronic cases with mixed infection.—Mr. SHEILL said he considered the paper of extreme importance from the point of view of treatment of gonorrhœal infection in young children, as in such cases there were many difficulties in local treatment, and, therefore, if there was another means of treatment, it should be pushed. He did not think local treatment should be done away with, but he considered vaccines a very useful adjunct.—Dr. MADILL said he had tried many varieties of local treatment, and he thought the best results were produced by protargol. He was struck with the chronicity and difficulty of diagnosis in these cases. He pointed out that Bumm had described five kidney-shaped intracellular diplococci, one of which was Gram-positive, and the other four negative to this stain, and the only difference he knew between these was by culture. He thought gonococcus was very difficult to grow. He went on to describe the methods adopted at Wertheim's clinic for making this vaccine. No case was considered cured until the microscope failed to find anything of the nature of gonococcus in the secretions.—Dr. R. J. ROWLETTE pointed out the great difficulty in treating cases of gonorrhœa in the female owing to the ease with which the infection became mixed. He did not think that the gonococcus disappeared for a considerable time, but it became crowded out by other organisms, and was not easily found. In some cases of gonorrhœa in the male that came under his notice it was found necessary to treat with staphylococcus after treating with gonococcus vaccine. A

point of importance was that the vaccine should be made from a fresh culture. This he considered of more importance than that the vaccine itself should be fresh, although vaccine kept for a long time did lose in efficacy.—Dr. W. D. O'KELLY said that in some cases it was very questionable whether the infection was really gonococcal. He never succeeded in getting gonococcus to grow.—Mr. HENRY MOORE said that in the cases in which vaccine was most useful—namely, at the very beginning of an attack, or in old-standing cases of gleet—an autogenous vaccine was impossible. His method of obtaining a vaccine was to get Dr. Stokes to make one once a month from a male case on the second day of the urethritis. If in doubt as to the cause of an old-standing discharge or the cure of a patient who had suffered from gonorrhœa he gave from 15,000,000 to 30,000,000, and examined the resulting discharge, if any, 24 hours after. In old-standing cases of posterior urethritis no local treatment was effective without vaccine, and the serum should not be more than four weeks old.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on March 26th, Dr. John Lindsay, the President, being in the chair.—Professor J. H. Teacher gave a demonstration of gynæcological specimens illustrating various conditions, the most noteworthy being sections of the genital gland of a case of hermaphroditism showing both ovarian and testicular tissue elements, specimens of ovarian pregnancy, and a specimen of a uterus showing ectopic pregnancy in a rudimentary Fallopian tube. A lantern demonstration was also given on the embedding and development of the early human ovum. Professor Teacher reviewed the present state of our knowledge of the subject, more particularly in relation to the work of Professor J. H. Bryce and himself. The lecture was illustrated by numerous lantern slides and by microprojection of sections of the Teacher-Bryce ovum. Professor Teacher stated that the preparation still represented the earliest known stage of the human ovum, the only more recent specimen at all comparable in age being that of Young, of Edinburgh, which is apparently intermediate in development between it and the ovum of Peters, but probably abnormal. Several very valuable ova of about the age of the last have been found within the last five years, and the examination of these has confirmed and extended the discoveries due to that famous preparation. Professor Teacher also reviewed the position of the theories of the nature of menstruation and its relation to ovulation and fertilisation.—The discussion which followed was taken part in by Dr. S. Sloan, Dr. E. H. L. Oliphant, Professor J. M. Munro Kerr, Dr. G. Balfour Marshall, and the President.

Reviews and Notices of Books.

Instinct and Experience. By C. LLOYD MORGAN, D.Sc., LL.D., F.R.S., Professor in the University of Bristol. London: Methuen and Co., Limited. 1912. Pp. 299. Price 5*s.* net.

Professor Lloyd Morgan, as readers of his earlier writings are aware, possesses in a remarkable degree the capacity for devising apt and clear definitions, and this capacity finds ample scope in the discussion of the questions with which he deals in his latest volume—questions which owe their difficulty in no small degree to the divergence of meaning attached by different writers to the terms used in the debate. It is the more necessary to remove this source of confusion because, as the author very justly points out, our views with regard to the nature of instinct—and these views are necessarily expressed in the definition of instinct which we adopt—imply to a large extent the whole character of our philosophical outlook. Professor Morgan, approaching the question as a biologist, would define instinctive behaviour as "that which is, on its first occurrence, independent of prior experience; which tends to the well-being of the individual and the preservation of the race; which is similarly performed by all the members of the same more or less restricted group of animals; and which may be subject to subsequent modification under the guidance of experience." On the ground of physiological experiment he would conclude that such behaviour is the outcome of inherited subcortical dispositions, being, in fact, of the nature of more highly complex reflex action, and as such within the capacity of the decerebrate animal. But in the normal animal with intact brain this behaviour, though in itself automatic, is accompanied by conscious experience, and the experience so begotten reacts on subsequent behaviour, which then, in so far as it is modified or in part conditioned by such reaction, becomes intelligent. The conscious guidance implied in intelligent behaviour is in the higher vertebrates correlated with functional activity in the cortex. It may be noted in passing that this restriction of the term instinctive to the expression of subcortical dispositions would exclude from the category of instincts those hereditary mental tendencies, shown, for instance, by men of genius, which are very commonly spoken of as instinctive. Professor Morgan would explain such tendencies as due also to congenital dispositions—to dispositions, however, not of the subcortex, but of the cortex—and he would qualify them as innate. This sharp distinction drawn between innate tendency and instinct appears to be warranted by physiological experiment, and the use of distinctive terms to describe the two classes of facts is practically very convenient.

Professor Morgan's doctrine of experience, which it is the special aim of this work to expound, is the development of his view of the relation of instinct to intelligence. The first experience given to the higher vertebrate is that which accompanies instinctive behaviour; we have at that stage the beginning of the synthetic process of experiencing, correlated with the synthetic process of living, which is its natural precursor. The essential characteristic of this higher level of living is that new relationships supervene, which we describe as conscious. Is there any sufficient reason for separating these relationships, as subjects of scientific inquiry, from the rest of the world-process? To this question Professor Morgan's reply is an emphatic negative. In his view the province of science is to deal with process and its products as somehow existent; it is not concerned with their *source*, which is a question for metaphysics. And if science has simply to accept chemical and physical processes, gravitative or crystalline processes, without attempting to explain their source, so also has it to accept conscious processes as within the constitution of nature. In holding this monistic doctrine Professor Morgan is, of course, at issue with the supporters of vitalism and animism, but he appears to be even more removed from sympathy with the advocates of what are commonly regarded as mechanistic theories. This is clearly evident, for instance, in his dismissal of the epiphenomenalist view of consciousness, and in his insistence on the innovating and incalculable trend of evolution. In his treatment of this latter point his attitude, indeed, despite the fundamental differences in their doctrines, approximates very much to that of M. Henri Bergson; and we may add that Professor Morgan is ungrudging in his recognition of the services which he considers that the French philosopher has rendered to science by his destructive criticism of the intellectualist position. This capacity to sympathise with and to understand the views of opponents is no small element in the effectiveness of Professor Morgan's argument, and it is shown in the examination of doctrines the most alien to his own tendencies.

The book is altogether a remarkable contribution to psychological literature, and even those who cannot accept all the author's conclusions may feel grateful to him for

the clarifying influence which his work must exercise on the discussion of the difficult and complex questions that it deals with. The book, as we learn from the preface, was in some measure suggested by a discussion on the subject of Instinct and Intelligence which took place two years ago in London at a joint meeting of the Aristotelian and British Psychological Societies and of the *Mind* Association. The fact is worth noting for the encouragement of the organisers of such intellectual tournaments, which can certainly not be held fruitless if they help in any way to stimulate the production of works of the value of this singularly acute and penetrating study.

Researches in Colour Vision and the Trichromatic Theory. By Sir WILLIAM DE W. ABNEY, K.C.B., D.Sc., D.C.L., F.R.S. With four coloured plates and other illustrations. London: Longmans, Green, and Co. 1913. Pp. 418. Price 21*s.* net.

WE have no hesitation in saying that this book is the most important contribution to the study of colour vision, normal and diseased, that has appeared for a long time. Those interested in the subject know that Sir William Abney has for many years been publishing researches on it in the Proceedings of the Royal Society and elsewhere. It is not easy to keep closely in touch with periodical publications of this kind, and we cordially welcome this authoritative exposition of his work, which gathers together the scattered threads and gives a connected account of the distinguished author's views. These views are strongly opposed in certain quarters, and this is an exposition of the work, and the deductions from that work, of one man.

The originality of the methods of attacking the problems, both in their conception and in their practical working out, will appeal to every scientist. They are scarcely open to criticism, though criticism is not only justified but would certainly be welcomed by the author in the interpretation of the results. Sir William Abney is scientifically the lineal descendant of Thomas Young, Helmholtz, and Clerk Maxwell. All were physicists, and all, great men as they were, were most vulnerable on the physiological side. The Young-Helmholtz theory of colour vision is, *par excellence*, the physicist's theory. Let us admit at once, with Sir William Abney, that it does not satisfactorily explain all the problems. At least it explains many, perhaps most, and in any case we sympathise with the author's wish "to show that the trichromatic theory of colour vision does not yet require a funeral oration over its remains." As he says again, "A theory, to be one of perfection, must offer the truth, the whole truth, and nothing but the truth. The trichromatic theory offers the truth: but the physiologists must add their quota to it to make it the whole truth." This is a safe and reasonable standpoint.

Colour vision and its defects have an important practical bearing on everyday life, but they appeal to a relatively small number of medical men. Those interested in the subject are bound to read this book, and it will be found that it is not all easy reading. Sir William Abney's writings are not always as lucid as they might be, though this book is much less obscure than some of the original papers upon which it is largely based. There is one irritating feature which we should like to see altered. All the statistics and diagrams are referred to an arbitrary scale, which necessitates reduction to wave lengths by the reader. They might equally well have been recorded in wave lengths and thus made universally available. The specialist will find most to interest him in Sir William Abney's new method of numerically estimating colour deficiency in the colour blind, but the facts upon which it is based are by no means accepted by all.

Studies in Clinical Medicine. By C. O. HAWTHORNE, M.D. Glasg., Physician to the North-West London and Royal Waterloo Hospitals. London: John Bale, Sons, and Danielsson. 1912. Pp. 441. Price 6*s.*

THIS is a volume of essays and lectures of varying interest, many of which have already appeared in the current medical journals, but all have been revised and some of them have been partly rewritten.

The first five essays deal with different aspects of rheumatoid arthritis and contain some interesting observations on various aspects of this disease, including the occurrence of heart disease in connexion with "rheumatoid" joint disease. Reproductions of excellent photographs are given, showing the deformities that may ensue. One of the articles bears the title, "On the Occurrence of Pyrexia in Cancer and Other Diseases of the Liver and in Cases of Gallstone." The fact that pyrexia may accompany malignant disease not only of the liver but of other organs (e.g., the lungs) is important, and unless it is fully recognised errors in diagnosis are likely to arise. Dr. Hawthorne records some cases in which the temperature was a confusing element in diagnosis. In one case it was not only the mere occurrence of pyrexia which was of interest, but also the course and character of the fever, and the fact that on many occasions each of the sharp, short-lived outbreaks of fever was preceded by a severe rigor. It has been suggested that "the absence of ague-like attacks" favours a diagnosis of malignant disease, but the cases quoted show that such a proposition does not always hold. Reports are given of several clinical lectures and demonstrations. One which is well worthy of attention is on "Two Cases of Chronic Renal Disease associated with Secondary Inflammation of the Serous Membranes." Dr. Hawthorne draws attention to the well-known fact that a patient with chronic interstitial nephritis may reach an advanced stage of the disease without any symptoms causing him anxiety or even annoyance. The first active manifestation of this disease may be an acute pleurisy. We agree with Dr. Hawthorne that it is not too much to say that an acute pleurisy occurring in a patient who has reached middle life is an event which ought in itself to excite a suspicion of kidney disease. Exactly the same remark may be made of pericarditis, and in this instance there may not only be an absence of fever, but also absence of pain.

We have found much of interest in this volume. There is evidence of careful observation and also of the power to describe and record clinical conditions. Much instructive material is gained by records of bed-side teaching; the observations at the bed-side form the most valuable information a student can obtain, both for examination purposes and subsequently to aid him in the actual practice of his profession.

Trommelfellbilder. Ein Atlas für den Praktischen Gebrauch. Herausgegeben von Dr. A. PASSOW, o.ö Professor an der Friedrich Wilhelms-Universität und der Kaiser Wilhelms-Akademie für das Militärärztliche Bildungswesen zu Berlin. Mit 26 farbigen lithographischen Tafeln. Jena: Gustav Fischer. 1912.

FOR beauty and truth of tint and accuracy of drawing it is probable that most of these coloured lithographs have never been equalled. We endorse Dr. Passow's approval of the drawings, which are from the pencil of Herr Helbig. As an aid to instruction, but to individual instruction alone, they would be invaluable, but for the assistance of the practitioner who wishes information the same scarcely applies. For the latter either does not know enough to enable him to find the counter part of the case he desires, or he knows enough not to require such an illustration. The potential value, therefore, of this artistic production is

low; its artistic merit high. As the science and art of aural surgery and therapeutics advance, so is the need for works of such a description as Dr. Passow's diminished. Less importance is attached to trifling variations of the size, shape, and position of the cone of light, the colour of the tympanic membrane, and such-like minutiæ, which form the bulk of the limner's stock-in-trade.

This is quite the finest atlas of drawings of the tympanic membranes published of recent years.

Lehrbuch der Chirurgischen Operationen an der Hand klinischer Beobachtungen für Aerzte und Studierende. Von Professor Dr. FEDOR KRAUSE, Geh. Medizinalrat, dirigierendem Arzt am Augusta-Hospital in Berlin; in Gemeinschaft mit Dr. EMIL HEYMANN, Oberarzt am Augusta-Hospital. 1. Abteilung, mit 233 zwei- und mehrfarbigen Abbildungen auf 55 Tafeln, sowie 57 Figuren im Text. Berlin und Wien: Urban und Schwarzenberg. 1912. Pp. 252. Price, paper, 12.50 marks; bound, 14 marks.

THIS is the first instalment of an elaborate and valuable treatise on operative surgery, and this section deals with the general preparations for an operation; the methods of obtaining anæsthesia, both local and general; the principles of asepsis; the sterilisation of the hands of the surgeon and his assistants, of the skin at the site of the operation, the dressings, and the suture material. The treatment of complications, such as heart failure, and pain after the operation is also considered. After these preliminary matters have been dealt with the surgery of the head is treated, and that is the only section of operative surgery contained in this part. It begins with an account of wounds of the head, including fractures; then follow the removal of tumours of the face, the plastic operations on the face, the surgery of cleft palate, and rhinoplasty. The section on the surgery of the eye includes only enucleation of the bulb, operations on the lids, and osteoplastic resection of the outer wall of the orbit. Descriptions of the operations of the ear and nose are given, and are followed by a very full account of the surgery of the fifth nerve, including resection of the Gasserian ganglion. The majority of the operations described are illustrated with black-and-white or coloured plates, and these have been executed in a very satisfactory manner.

This work has been designed and carried out admirably. We await with interest the succeeding parts, for it should prove to be a most complete treatise on operative surgery.

Hygiene for Health Visitors, School Nurses, and Social Workers. By C. W. HUTT, M.A., B.C. Cantab., D.P.H. Oxon. London: P. S. King and Son. 1912. Pp. 415. Price 7*s.* 6*d.* net.

THE health visitor now takes a recognised and important position among sanitary officials. In many of our larger towns health visiting alone occupies the time of several women on the establishment of the medical officer of health's department; in other places health visiting and school nursing are combined, while in rural areas the county district nurses are sometimes very usefully employed by local authorities to give assistance in these branches of sanitary work.

It is, however, by no means easy to answer the question, What should a health visitor know? Every medical officer of health, and, indeed, every medical practitioner, can at once name dozens of things which she can do, to the great advantage of the working-class households which she visits, and perhaps almost as many things which she should not do. Usually a nebulous compromise is effected by saying that it all depends upon the woman herself, and that the most essential qualification is "tact." But if tact is to be truly exercised it must be based on knowledge, not only of the particular details and rules which the visitor is to attend to as part of her instructions, but of the essential principles which underlie them. Here, however, we enter upon the chief difficulty which confronts those who undertake to examine and give certificates to health visitors. How far can the examiner reasonably go in insisting on genuine knowledge and rejecting the spurious substitute afforded by the more or less accurate recital of semi-scientific tags which are only imperfectly understood? At present the examination standard is necessarily dependent partly on the kind of knowledge which candidates as a whole are found to possess and partly on the teaching available.

It is from the latter point of view that we must give a very cordial commendation of Dr. Hutt's work. While in its subjects it follows the articles of the syllabus of the examinations for health visitors held by the Royal Sanitary Institute, it is in no sense a cram book. A study of any one of its chapters shows that Dr. Hutt has given great pains to the selection of the subjects with which he deals, and to the accuracy of the instruction which he gives, and that he has nowhere lost sight of the purpose for which his book is intended. Women of good general education, especially if it includes some knowledge of elementary science, who are intending to follow this line of municipal work, could not do better than master the contents of this volume. It should not only give them all the information requisite for examinations such as those of the Royal Sanitary Institute or National Health Society, but also should ground them, when they come to undertake practical work, in the principles which they have to apply, so that they will carry it out with a proper sense of proportion. We may add that there is much information in this volume which will be found of great value to those engaged in private nursing.

Cerebellar Functions. By Dr. ANDRÉ THOMAS, Ancien Interne des Hôpitaux de Paris. Translated by W. CONYERS HERRING, M.D., New York. With 89 figures in the text. Nervous and Mental Disease Monograph Series, No. 12. New York: Journal of Nervous and Mental Diseases Publishing Company. 1912. Pp. 223. Price $ 3.00.

SINCE the appearance of his well-known Thèse in 1897 Dr. André Thomas, of Paris, has been regarded as one of the authorities on the physiology and pathology of the cerebellum, and he has justified this opinion by many other valuable communications on this difficult subject. In a recent monograph he has given a very complete *résumé* of the state of present knowledge on the anatomy and physiology of the cerebellum, and on the symptomatology of cerebellar disease, and it is this monograph which now appears in an English translation, and will, we feel sure, be welcomed by a large circle of readers. The first section of the book is taken up with an exposition of the clinical facts and experimental phenomena that are found to result from interference with the functions of the cerebellum. The second part is concerned with their interpretation. While it is evident throughout that the material is being handled by one who is a master of his subject, we wish especially to commend the second division of the book, and in particular the chapter on the cerebellum and motility, which contains a judicial investigation of the claims of rival hypotheses to consideration.

The physician in search of knowledge in this department of medicine will find this monograph to contain a complete and up-to-date presentation of the subject, lucidly set forth and unencumbered by non-essentials. The translation is on the whole well done, but it bears evidence of a certain amount of haste, for several slips have crept in, and the rendering of the original is not always satisfactory.

Cancer of the Breast Clinically Considered. By the late CECIL H. LEAF, M.A., M.B. Cantab., F.R.C.S. Eng., Surgeon to the Cancer Hospital. London: Constable and Company, Limited. 1912. Pp. 154. Price 10*s.* 6*d.*

THIS work was left almost complete by the author at the time of his early death, and all who read it will appreciate how great a loss surgery sustained by such an untimely end. Mr. Cecil Rowntree has seen the book through the press, and he has completed the last chapter, which had been left unfinished. The object of the author in writing the book was, he tells us, to record the results of his operations for cancer of the breast, and he took great pains to follow all his cases, so as to obtain accurate information as to their condition for several years after the operation. The anatomy of the breast and the neighbouring structures is fully described. The etiology and the diagnosis are discussed, and then the selection of patients for operation and the choice of the operation performed in each are considered, and the radical operation is described. A chapter worthy of special mention is that in which the results of the author's operations are described and discussed. Dr. T. Johnston English has added a chapter on the subject of anæsthetics.

In addition to a number of black-and-white illustrations there are some very good water-colour sketches by the author, which have been excellently reproduced. The book is a useful clinical study of the disease and of the operations performed for its removal.

LIBRARY TABLE.

The Origin of Life: Being an Account of Experiments with Certain Superheated Saline Solutions in Hermetically-sealed Vessels. By H. CHARLTON BASTIAN, M.D. Lond., F.R.S. Second edition, with an important appendix and two additional plates. London: Watts and Co. 1913. Pp. 98. Price 3*s.* 6*d.* net.—The second edition is in every respect like the first, which was reviewed in THE LANCET of April 29th, 1911, p. 1140, save that an appendix of 21 pages and two plates have been added. The appendix consists of a paper read before the Royal Society of Medicine in November, 1912. The author restates his position as to the nature of the problem and the extent to which, in his opinion, it has been solved, gives replies to criticisms, cites new experiments, and what should be done in further trials. We cannot find that the author has, by his experiments on grapes, or by his additional 280 experiments, added anything to help convince us of the demonstrable accuracy of the position he maintains. We are told that several learned gentlemen, whose names are given, well known in the medical world, "all saw typical budding torulæ which had been removed from one or more of the tubes"—the tubes containing one of the ordinary colourless solutions. We have no independent report by these onlookers. To our mind the position is quite unchanged, and we ourselves still remain unconvinced, save, of course, of the courage and good faith of Dr. Bastian.

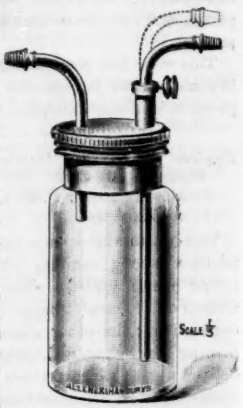
A Manual of Infectious Diseases occurring in Schools. By H. G. ARMSTRONG, M.R.C.S. Eng., L.S.A., and J. M. FORTESCUE-BRICKDALE, M.A., M.D. Oxon. Bristol: John Wright and Sons, Limited. 1912. Pp. 155. Price 3*s.* net.—This book is designed to be of service to the masters and mistresses of schools, and the diagnosis and treatment of disease are treated therefore from this standpoint. The infectious fevers that occur in school-are well described, and there is a good chapter on eye infections and one on ringworm. This latter might be read with profit by medical men, many of whom do not apparently realise the urgency, from the school point of view, of accurate diagnosis in this disease. It is unfortunate that in a book the special chapters of which are so thorough the introductory chapter should give the impression of being inadequately considered. This portion of the book is too much dominated by the conception of the mode of disease production found in diphtheria, and unfortunately perpetuates what can be described only as the superstition that burning sulphur in a sealed room is an effective disinfectant. In the treatment of diphtheria also no attention is devoted to possible local treatment and to medicinal treatment; these aids cannot safely be neglected. But these are minor blemishes on a book that well describes the chief signs and symptoms of the infectious fevers, including the typical rashes. The outlines of treatment given are also eminently useful, and are simplified to a degree which should make the subject readily comprehensible to the lay mind. Mr. Armstrong directs attention to the value of croton oil applications for small patches of ringworm, by means of which he "can get the place well more quickly than by X rays."

Digestion and Diet. By THOMAS DUTTON, M.D. Dunelm., M.R.C.P. Edin. London: The Walter Scott Publishing Co. 1913. Pp. 131. Price 2*s.* net.—The fact that this is the fourth edition seems to indicate that there is some demand for such a production. The title is misleading, as there is nothing said about digestion and very little about diet in the ordinary usage of the word. The subject-matter is almost confined to the varieties and sources of foods, and is treated in a very broad, gossipy manner. It is a pity this new edition is not pruned of verbal errors and numerous examples of careless phraseology.

New Inventions.

MEDICATED OXYGEN BOTTLE.

IT is not unfrequently desirable to administer nitrite of amyl, or iodide of ethyl, along with oxygen to patients suffering from anginal attacks or spasmodic asthma. This is usually done by putting the medicament upon a piece of blotting-paper or cotton-wool in the funnel or inhaler close to the patient's face. The inconvenience of this is that the apparatus is apt to move from its position and there is no means of regulating the strength of the inhalation. To obviate these inconveniences a bottle has been made for me by Messrs. Allen and Hanburys, Limited, of Wigmore-street, London, W., with two metal tubes arranged similarly to those of an ordinary Woulfe's bottle. One of these, however, can be moved up and down, and may be fastened by means of a screw, as shown in the illustration. The cotton-wool or blotting-paper, moistened with nitrite or iodide, is placed in the bottle. At first the movable tube is drawn well up, so that as the oxygen passes through it over the wool the vapour is dilute. As the nitrite evaporates the tube is pushed further down so as to go closer to the paper or wool, and thus a stronger vapour is obtained. When it is desired to give a diffusible stimulant ether may be employed in a similar way, or a quantity of rectified spirit, brandy, or whisky may be poured into the lower part of the flask and oxygen allowed to bubble through it. The bottle may also be used simply to render the oxygen warm and moist. In this latter case the bottle is half filled with hot water and placed in a small basin of hot water, or surrounded by hot wet flannels. In some cases of bronchitis it may be advisable to add to the hot water friar's balsam, terebene, or other terebinthine preparation.



LAUDER BRUNTON, M.D. Edin., F.R.S.

Stratford-place, W.

THE LANCET.

LONDON: SATURDAY, APRIL 5, 1913.

The Working of the National Insurance Act.

WE have during the last month[1] been publishing the notes of a member of the staff of THE LANCET who, in the character of a Special Commissioner, has been making personal inquiries in certain selected centres of the country into the working of the National Insurance Act with reference to the administration of medical benefit. The area that would have to be covered to make any such inquiry thorough would be the area of Great Britain, for it is a fact that the results of the Act, both as regards the medical service which the country will derive from it and as regards the advantages or disadvantages which will accrue from it to the medical practitioner, will vary greatly in different localities. It is perfectly certain that in many places where identical social conditions appear to prevail, and in many contiguous neighbourhoods, presenting as far as can be seen the same qualities of population, average prosperity, and type of employment, there will be found different responses to the promises of the Act when a close examination is made. It may not be necessary to carry out any such wide scrutiny as is thus suggested, but we propose to continue our investigation of the working of the Act until the main points which have been alluded to in our columns and elsewhere as probably affording material for future amendment have been dealt with. And this is the more necessary as already it is clear that the medical profession as a whole is in two minds about the working of the Act. The number of persons who, whether they approve or not of the almost unlimited extension of contract practice which has now occurred, admit that the material position under the Act is better than they had been led to expect, is on the increase; but there is rightly no relaxation of watchfulness on the part of those who feel that in many ways the sections of the Act dealing with the administration of medical benefits are fraught with danger to medical progress, both scientific and material. The evidence from Scotland, where our representative is next proceeding, will, we believe, be found to bear this out.

Our valuable contemporary the *Manchester Guardian* has made an attempt to survey the working of the National Insurance Act during the first two months, and, according to their summary of the situation, inquiries made in Manchester and Salford go to show that from a purely administrative point of view the defects which were inseparable from the scope of such complex and far-reaching schemes as were inaugurated by the Act are rapidly disappearing. But it is quite clear that the administration of medical and sickness benefits has been attended in Manchester and Salford with the defects which have been mentioned by our representative as occurring in those localities which he has as yet visited. The exact relation of the practitioner who has accepted a place on the panel towards the out-patient department of a hospital, and those who administer it, is difficult to define. Our representative points this out to be particularly so in Carlisle; the author of the articles in the *Manchester Guardian* alludes to the same difficulty in Salford. The hospitals naturally do not consider that an insured person, being in receipt of sick pay, is a proper object for the charity of the hospital when his case is one that could be perfectly well treated by the medical officer to a club on whose list of patients he already figures as an insured person. The medical practitioner on the panel, on the other hand, thinks that the staff officers of hospitals are now finding a great many cases unfit for hospital treatment which before the working of the Act would have received treatment in the out-patient department. And the trouble is complicated by the fact that a certain number of patients, being workmen who through various funds collected in their workshops are small subscribers to the hospital, do not consider that the benefits of the hospital form in any sense a charity to be withheld from them if they are unsuitable patients for charity. They choose to regard what is done for them at the hospital as a service for which they have paid in their subscriptions, and this attitude, which has proved a difficulty already in many places, bids fair to be aggravated.

It was seen, when the National Insurance Act first made its appearance as a remarkably unfinished Bill, that many difficulties would centre round such questions as the grant of, and payment for, medical certificates. It was clear that an enormous amount of certification would be required at the hands of the medical profession, while experience warned us that the State would be certain to demand as far as possible that this certification should be done gratuitously. A fundamentally important point in connexion with certificates was perceived, upon the issue of the Regulations, to be left in a very doubtful position, and this point was raised just before Easter by a suit heard in the King's Bench Division before Mr. Justice BAILHACHE. In this case the plaintiff, Mr. W. V. HEARD, a member of a branch of the Ancient Order of Foresters, sought against Mr. C. PICKTHORNE and others representing the Court Abbey Foresters a declaration that a resolution of the society was illegal, *ultra vires*, and unenforcible. The resolution objected to was to the effect that all certificates of incapacity, enabling persons insured under the National Insurance Act in the approved society mentioned to draw sick pay, must be signed by medical men on the panel, and that the signature of a medical man not on the panel could not be accepted for the purpose—that is to say, the member of a society who preferred to be attended in sickness by a medical man not on the panel, paying him himself, could not draw sick pay upon the certificate of that medical man, but must obtain one from a member of the panel. Unfortunately, this important point was not decided by Mr. Justice BAILHACHE, who accepted the contention of counsel for the

[1] THE LANCET, March 8th (p. 721), 15th (p. 787), 22nd (p. 854), and 29th (p. 920).

defence, and held that the resolution passed was not, in any event, such an illegal act as to justify an action being brought in connexion with it. It was, he held, a matter to be decided by arbitration under the rules of the society, as contemplated by Section 67 of the Act, with right of appeal to the Insurance Commissioners. Mr. Justice BAILHACHE therefore dismissed the action before him with costs, and any appeal that may be made against his decision will be awaited with interest, as will also be the result of appeal to the Commissioners if the determination of the question should be found to rest ultimately with them.

The Organisation in London of the Treatment of Tuberculosis.

THE practical application of sanatorium benefit was initiated in July of last year, but during the months that have passed since then, although a certain number of patients have been admitted into hospitals or sent to sanatoriums, much confusion has existed in relation to all organised effort to deal with the problem. The London County Council, in its position of central public health authority, is well fitted to systematise the arrangements in London, and we are glad to see that the Public Health Committee of that Council have been requested to prepare forthwith and submit to the Council a scheme for dealing with tuberculosis throughout the Administrative County of London. We have published an account of a report from that committee which foreshadows the course to be recommended. The existing provision for dealing with tuberculosis is in the hands of several authorities and institutions, so that some confusion is perhaps inevitable. These may be classified as follows: (1) official agencies—the County Council, both as a health and an education authority, the local sanitary authorities, the Poor-law authorities (including the Metropolitan Asylums Board), and the Insurance Committee; and (2) voluntary agencies, as the general and special hospitals, the tuberculosis dispensaries, the various nursing, charitable, and philanthropic associations, and religious bodies. It is obvious that if the best results are to be obtained these authorities and institutions must be coördinated. Particularly in relation to the London County Council and the Local Government Board might it be suggested:—

> When two authorities are up,
> Neither supreme, how soon confusion
> May enter 'twixt the gap of both, and take
> The one by the other.

We especially approve of the proposition that advantage should be taken as far as possible of the large general and special hospitals. The advantages they can offer in the way of an experienced staff, beds for observation cases, special departments, and clinical laboratories are far in excess of any provisions that could be made by the local authorities in the shape of new dispensaries, with a limited staff. Important assistance as regards research might also be obtained by investigations made at hospitals devoted to diseases of children, where opportunities arise of studying tuberculosis in the early years of life. This is well illustrated by an interesting paper which we publish this week in another column on the pathology of tuberculosis in infancy and childhood, by Dr. C. PAGET LAPAGE and Dr. WILLIAM MAIR. Further, facilities for research would be much greater and more valuable at one of the existing hospitals than at a newly formed dispensary. In order to facilitate the part to be played by the large hospitals in the general scheme for the treatment of tuberculosis, the staffs of the London special hospitals met on Dec. 10th, 1912, and passed certain resolutions.[1] Among these resolutions one was to the effect that each special hospital for diseases of the chest should be the central tuberculosis authority in its own area; that area would consequently have the advantage of the services of the members of the staff of the hospital and the many opportunities offered by such an institution which we have mentioned, while in an area where no special hospital existed one of the general hospitals could act as the central tuberculosis authority. We heartily commend this proposition and the others passed at the meeting to the favourable consideration of the Public Health Committee of the London County Council.

There is another matter in reference to the working of the sanatorium benefit to which we think attention should be drawn. Tuberculosis officers have been, or are about to be, appointed throughout the country. It is of the utmost importance that care should be taken, first, that they have had an amount of practical experience with tuberculosis sufficient to render them actual experts; secondly, if these officers are appointed by the various local authorities a strict veto should be exercised by the chief administrative body, so as to prevent local influence from being exerted to bring about the election of unsuitable candidates. In order to give those medical men who wish to devote themselves to the duties of a tuberculosis officer opportunities of special study courses of instruction are being instituted at the hospitals for diseases of the chest in London. A complete curriculum should consist of studies in the wards, out-patient rooms and laboratories, instruction in a sanatorium, and in addition attendance on special lectures in the diagnosis and treatment of tuberculosis and in administrative duties. At present the amount of experience required in candidates for these appointments borders on the farcical. Attendance on two afternoons a week at a tuberculosis dispensary over a short period is all that is necessary. We trust that when a central tuberculosis authority is established, at least six months' study in a special hospital will be insisted on. Indeed, we would go further and say that as the duties involved will practically form a special municipal or State service, similar courses of study should be required as in the case of medical officers of health, and certificates stating that the candidates have shown efficiency in this particular branch of medicine should be demanded. We believe that if this plan were instituted, combined with the endowment of laboratories for research, an encouraging commencement would be made for combating the disease. Another advantage resulting from such special training would be that the officers would be in a position to recognise and report upon the rarer forms of

[1] THE LANCET, Dec. 14th, 1912, p. 1672.

pulmonary tuberculosis, and thus add to the general knowledge of that disease. Dr. J. NICOL GALBRAITH records this week an interesting case of acute tuberculous pneumonia with recovery. This condition is generally supposed to be fatal, but tuberculosis officers will have exceptional opportunities of meeting with similar cases. Especial experience is needed in order to recognise them, but when recognised they may be successfully treated.

Superfluous Oxygen as the Peril of the Mine.

IT used to be taught in the early days of chemical lessons that when a candle went out it was safe to assume that the air was no longer fit for human respiration. The belief still prevails even amongst miners, for they reckon that they have had a narrow escape if they eventually reach the surface safely after passing along a mile or so of mine roadway in which the air would not support the combustion of an oil lamp. According to recent researches this is a fallacy, and the observation is of the utmost importance connected with the protection of life in mines. The fact would appear to be that normal air at sea level contains oxygen in excess of the requirements of healthy respiration; and when we reflect that at great altitudes colonies of human beings are known to exist and enjoy a hardy and vigorous life in spite of the fact that the partial pressure of oxygen is only 12 per cent., the point may well arrest our attention. The physique of the Indians dwelling on the upper slopes of the Andes is notoriously splendid, and the inhabitants of the high plateaus of Thibet combine physical vigour with activity. "It is well known," writes Dr. LEONARD HILL, "that men can work hard and live vigorous, healthy lives in the mountainous regions of the earth where the partial pressure of oxygen is only 17 per cent. of an atmosphere or less. In the Alps there are noted health resorts at very high altitudes, and the Alpine guides and soldiers are the healthiest of men. Mexico City and Johannesburg were built at an altitude of about 6000 feet. In the Andes railways have been built and mines worked at an altitude of 12,000 to 15,000 feet, and several towns with populations exist at 10,000. The human organism easily compensates itself for the diminution in the partial pressure of oxygen. The ventilation of the lungs and the percentage and total amount of hæmoglobin increase, while the power of the hæmoglobin to hold oxygen in combination also changes, with the result that the tissues obtain an adequate amount of oxygen."

If it can be substantiated that, while chemical combustion requires the presence of something over 17 per cent. of oxygen in the air human respiration can be satisfied with less without any harm accruing to the organism, it follows that a scheme presents itself, the application of which should diminish very considerably the loss of human life in the coal mine. The suggestion of adopting a protective measure based upon these considerations has reached us in a little book written by a practical chemical and mining engineer.[1] He shows that the needs of combustion and respiration are different equations. Thus in the case of combustion it is the percentage amount of oxygen that matters, but in respiration it is (within limits) the actual quantity—i.e., the weight in a given volume—that counts. A cubic foot of air, for example, with an oxygen percentage of 17·5, contains, at sea level, almost exactly the same weight of oxygen as an equal volume of air with 21 per cent. of oxygen at an altitude of 5000 feet. A lamp will not burn in the former, but will, of course, burn quite readily in the latter. For the purposes of respiration, however, they are exactly alike. It seems possible, therefore, to provide the miner with a supply of air perfectly adapted for respiration, but which fails to support combustion. In such an atmosphere he should be able to live a healthy respiratory life, while he should be free from the terrible risks of a fierce chemical union of gases or dust with oxygen which gives rise to the appalling colliery explosion. While the air is good enough for him to breathe it would fall short of the requirements of chemical combustion. Dr. HARGER points out that, curiously enough, one gas—methane—which is of such vital importance, because it is the chief explosive constituent, in mines, is fortunately extremely sensitive to lack of oxygen, for the methane flame goes out when the oxygen has been reduced to about 17·5 per cent. Hydrogen and acetylene, however, will continue to burn until the oxygen is reduced to 7·5 per cent. and 9·5 per cent. respectively, but they are rarely if ever constituents of mine air. These observations are again of importance, since it means that the acetylene lamp could be used without risk for illuminating the mine in an atmosphere containing a reduced amount of oxygen, but yet which is sufficient for respiratory purposes.

Paradoxical as it may appear, it is quite conceivable that many of the great mine explosions have been caused by the enforcement of a high degree of chemical purity of the air. When ventilation was bad there were, at all events, no great dust explosions, and yet the Coal Mines Regulations Acts insist that a place shall not be in a fit state for working or passing therein if the air contains less than 19 per cent. of oxygen or more than 1·25 per cent. of carbon dioxide. On the other hand, Dr. LEONARD HILL has declared that if the mine were ventilated with air containing 17 per cent. of oxygen in sufficient volume to keep the miners cool and fresh, not only would explosions be guarded against, but the mines could be safely worked and illuminated with electricity, and miners' nystagmus prevented. If these conclusions have a good foundation—and they appear to rest on sound reasoning, practical considerations, and experiment—it may well be asked why in the name of humanity the principles laid down are not put immediately into practice? Dr. HARGER says the reduction of the percentage of oxygen in the ventilating current is undoubtedly the surest method of rendering mines safe from both gas explosions and dust explosions, as well as from the more frequent though less disastrous fires in the roadways, and he adds that this method, founded on his work and only recently discovered, is not yet in practice, though it has been proved that it can be worked on a large scale with every satisfaction. Is there any reason for delaying the application of a method which suggests the prevention of an appalling sacrifice of human life and of much human misery and pain?

[1] Coal, and the Prevention of Explosions and Fires in Mines, by John Harger, M.Sc. (Victoria), Ph.D. (Heidelberg), M.Inst.M.E. London: Longmans, Green, and Co. 1913. Pp. 183. Price 3s. 6d. net.

Annotations.

"Ne quid nimis."

VENTRAL FIXATION OF THE UTERUS.

AN interesting and important discussion on ventral fixation, including under this term the various operations which have been devised of recent years for replacing the displaced uterus and fixing it in a more or less normal position, has recently taken place in the Obstetrical and Gynæcological Section of the Royal Society of Medicine.[1] The term ventral fixation is rather inaccurately used by many writers. It should be reserved strictly for those cases in which some portion of the anterior surface of the uterus is attached firmly by sutures to the structures of the anterior abdominal wall, most commonly to the peritoneum or to the peritoneum and muscle. Ventral suspension, on the other hand, should be employed to mean an operation in which the peritoneal covering of the uterus, either of the anterior or posterior surface, is attached to the peritoneum of the abdominal wall, so that a comparatively loose union or even ultimately a peritoneal band may result. If we may judge by the large number of cases recorded by some of those who took part in this discussion, these operations are performed by certain gynæcologists very frequently. There is, indeed, so great a discrepancy between the number of patients the advocates of these operations appear to see in whom such assistance is required and the number of patients in whom other surgeons find these operations called for, that the impartial critic cannot avoid coming to the conclusion that these procedures are performed by some gynæcologists on very slight indications. Indeed, one speaker rather aptly compared the more fervent advocates of the operation to the mid-Victorian practitioners, who considered all displacements of the uterus of the utmost clinical importance. It is not necessary for us to call attention to the fact, insisted upon by all modern teachers of gynæcology, that a displacement of the uterus *per se* is often of no moment at all, and, indeed, that such a position of the uterus may be normal for that particular patient. It is not an uncommon occurrence to find accidentally a retroversion of the uterus in a young single woman, no doubt congenital in origin, with no symptoms at all, requiring no treatment, and becoming cured as the result of the supervention of a pregnancy. In his remarks on the indications for these operations Dr. W. S. A. Griffith called attention to the two classes of cases in which they might be required, and with his main indications most gynæcologists will cordially agree. For cases of severe prolapse, more particularly after the menopause, in women who have to do hard manual labour, a properly performed ventral fixation, if combined with an efficient strengthening of the pelvic floor—a most important essential—is very successful in relieving the patient and enabling her to dispense with the use of pessaries. With this opinion most of the speakers were agreed, but there was evidently a good deal of difference of opinion as to the necessity for the operation in case of mobile backward displacements, and as to the success attending it. It has been pointed out by many writers that a large number of cases of backward displacements of the uterus, more particularly when combined with prolapsed and painful ovaries, are associated with a marked degree of neurasthenia and failure of the patient's general health. The latter condition is, indeed, often the actual or, at any rate, an aggravating factor in the production of the pain, and the general nervous state of the patient may be rendered much worse by mental worry and distress consequent upon the presence of dyspareunia. It is not to be wondered at, then, that in this class of case the woman is often but little benefited, and that the operation does not cure all the neurotic manifestations which she exhibits. In many instances the best cure for this state of things is a pregnancy, but not infrequently the mental distress is still further aggravated by sterility, and when all other remedies fail there is a great temptation to resort to one or other of these surgical procedures. The exact part played by the operation in giving relief in such cases is difficult to measure, and it is a not infrequent experience to find that when the effect of the rest in bed and the part played by suggestion has worn off the pain and symptoms return. We willingly admit that in many such cases great relief results and even pregnancy may occur and complete the cure, but it is in this class of case, where the main complaint is pain, that the ultimate results are so difficult to gauge and in which the records of individual observers are so likely to be unintentionally misleading. That the operation is an unscientific one is not in our opinion an argument of much weight; medicine is not an exact science, and many of the methods we employ with success for the relief of our patients are far from being scientific. To fix an organ which should be capable of movement may indeed be called unscientific, but if such a procedure cures a patient of symptoms which cannot be cured by any other means then the objection that the method is unscientific is of no value. That cases of intestinal obstruction may follow, and have followed, such operations is no doubt true, but this objection, when we remember the very small percentage of cases in which such an accident has occurred, is but a very minor one, and can be avoided by proper technique. There must of necessity in every operative undertaking be a certain small risk, but so long as the surgeon has faithfully and truthfully pointed out to the patient that such a risk exists, then provided that the patient with such knowledge is prepared to run the risk, it cannot be allowed to weigh too much against any procedure. The operations for fixing the uterus call for little skill, are attended with but a slight risk, and therefore lend themselves to abuse by those practitioners who take too narrow a view of their responsibilities, and who do not weigh with due care the value of the different symptoms present in each individual case. We have always thought that the best test of the legitimacy, if we may so term it, and necessity for any operation is the relative frequency with which it is performed by the surgeons attached to a large general hospital with a medical school—that is, in those conditions in which competent and honest criticism is not likely to be lacking. Judged by this standard, these operations of ventral fixation certainly appear to us to be justifiable in a certain selected number of cases and in certain very definite conditions, but hardly appear to be necessary to the very large extent to which they are practised at the present time by some surgeons and gynæcologists.

[1] THE LANCET, March 29th, 1913, p. 888.

THE FORTHCOMING IMPERIAL SERVICES EXHIBITION.

PROBABLY no more fitting subject at the present time could have been forthcoming for the Earl's Court Exhibition of 1913 than the Imperial Services. Since the last Naval Exhibition of 1891 and the last Military Exhibition of 1890, both of which were held at Chelsea, Great Britain has passed through one serious war and has stood on the verge of other wars, while the struggle now in progress must result in a momentous change in the map of Europe, compelling all nations to consider their offensive and defensive positions.

Apart from the interest to every patriotic citizen of all things relating to the security and defence of his country, both by sea and land, the medical profession has a twofold link with the army and navy. Not only is there a specialised military medicine, necessitating the existence of a special corps of military medical officers—using the term "military" in its generic sense, to cover both the navy and the army—but also to that corps is due a large measure of additions to the common scientific knowledge of the profession, more particularly in the domains of tropical medicine and hygiene and of the surgery of wounds. The exhibition will naturally include much that is of great interest to all medical men in relation to ambulance and surgery. The Red Cross Hospital will be utilised for displays of a specialised training of civilians to fit them to cope with emergencies and the disasters of civil life in the mass, as well as with individual first aid. In recent years we have had the eruption of Mont Pelée and the destruction of Messina as examples of the kind of catastrophe that makes the whole world shudder; and even as we write we realise that across the Atlantic there is at this moment another dramatic contest between man and the elemental forces of nature. It is in times such as these that we recognise the need for trained and organised help—a need as great in this strife of civil life as any need of war. That the medical aspect will not be neglected we may judge from the presence on the committee of Surgeon-General Sir James Porter, the head of the Navy Medical Department, Surgeon-General Sir Launcelot Gubbins, the head of the Army Medical Department, and Sir Arthur Conan Doyle, whose experience in South Africa makes him a fitting representative of what may be regarded as the civilian auxiliary to the official medical services. A still further claim of the exhibition for support lies in the fact that, should any profits accrue, the service charities will benefit thereby.

BACTERIOLOGY FOR PHARMACISTS.

THE revision of the syllabus of the pharmaceutical examinations must before long receive attention, and it is perhaps possible to obtain some idea of what is contemplated by the Council of the Pharmaceutical Society from the fact that under its auspices the last of a series of lectures on bacteriology has just been delivered in the lecture theatre of the School of Pharmacy by Professor R. T. Hewlett, of King's College. A knowledge of bacteriology would undoubtedly be a useful acquisition to pharmacists, although it is hardly an essential part of the equipment of the average chemist and druggist. If this be the view of the Pharmaceutical Council, the subject of bacteriology is more likely to be introduced into the syllabus of the higher or "major" examination than into that of the qualifying or "minor" examination, which latter is, for the present, considered by most pharmacists to be a sufficiently severe test. In his final lecture Professor Hewlett outlined a course of instruction in microbiology, pathological chemistry, and microscopy, which he considered might be advantageously introduced into the pharmaceutical curriculum. This included the principles of sterilisation and the preparation of culture media; the effects of the development of bacteria on certain pharmacopœial preparations, and the means of preserving such preparations; the principles of antiseptic and aseptic treatment, and the preparation and use of curative sera. He estimated that an elementary course of this kind would require as a minimum some 20 lectures of three hours each, provided the students possessed some previous biological training and a knowledge of the use of the microscope. As the pharmaceutical student's acquaintance with biology is of a very meagre kind, the 60 hours suggested would hardly suffice unless a modification of the present course in botany were made, diminishing the amount of systematic botany required, and making the course not a course in botany only, but altering it to one in general biology, including animal forms as well as vegetable ones, somewhat on the lines of the old syllabus in biology of the Preliminary Scientific (M.B). Examination of the University of London. For advanced students Professor Hewlett suggested a further course of instruction such as would put the pharmacist in a position to assist medical practitioners in the diagnosis of disease by undertaking the investigation of morbid material. Provided such work entailed no encroachment upon the functions of the medical practitioner, there seems to be a place for pharmacists who are trained to undertake investigations of this kind, but an increasing number of medical men happen at this time to be working in the same direction. The duty of the pharmacist to whom such work was entrusted would be, as Professor Hewlett pointed out, merely to report on his findings and not to attempt to make any deductions therefrom.

POISONING BY PETROL FUMES.

THE danger due to the highly inflammable nature of petrol fumes is well known, but not the danger due to their toxic properties, as very few cases of poisoning have been recorded. In the *Canadian Medical Association Journal* for February Dr. Guy W. Johnson has reported 42 cases of poisoning which occurred in the construction of the Montreal tunnel. This tunnel is about 650 feet long, 8 feet high, and 12 feet wide. Ventilation was carried out by a zinc pipe 8 inches in diameter, through which air was forced in by a fan, and also by the compressed air used to run the drills. A petrol motor engine was employed to draw the cars of rock from the face of the tunnel to the bottom of the shaft. As long as the engine was not running the ventilation was sufficient to keep the air in the tunnel fresh, except for a few minutes after blasting. But within an hour after the engine was started the air became foul, causing throbbing and congestion of the vessels of the head and headache. On Nov. 22nd two men were overcome by the fumes from the engine and carried out. They suddenly collapsed and became unconscious. Dr. Johnson saw them within 20 minutes, when they were recovering. The most notable feature was extreme flushing of the face. The pulse was 100 to 108 and of good volume and tension. Respiration was 46 and deep. The knee-jerks and the plantar and cremasteric reflexes were absent, but the conjunctival reflex and the pupillary reaction to light were present. The pupils were moderately dilated. The men could move their arms and legs but could not speak. There was slight salivation. Consciousness was rapidly regained, but the men complained of severe headache, chiefly frontal. They returned to work in about an hour, and next day were none the worse for their experience. On Nov. 24th 16 men suddenly collapsed within a few minutes of one another without any warning. They were brought to the surface as quickly as possible and seen by Dr. Johnson within 20 minutes of the occurrence. They were in all stages of anæsthesia; some had recovered consciousness and showed only headache, muscular weakness, and salivation; others were shouting and struggling as in the second stage of ether anæsthesia. A few were unconscious, with complete muscular relaxation. In two there were also clonic spasms of the arms and legs, which came on every few minutes and lasted about a minute. All the men also showed the symptoms described in the previous two cases. On the next day they were able to work, but 18 men were overcome in the same

way. Spectroscopic examination of the blood revealed absence of carbon monoxide. Analysis of the air in the tunnel showed traces of petrol fumes and no carbon monoxide. Four rats were placed in separate bell-jars into which a little petrol was introduced. They showed the following symptoms: first, reddening of the noses and gums; secondly, salivation; thirdly, restlessness; and fourthly, muscular relaxation and anæsthesia, which came on in 1½ to 2 minutes. A stage of clonic spasms, with relaxation between the spasms, followed. The rats were then removed and recovered in about 30 minutes, but three died without apparent cause next day. Post mortem their livers seemed very friable. Two fox-terriers were anæsthetised by inhalation of petrol with similar symptoms. After 15 minutes of anæsthesia the circulation and respiration ceased simultaneously without warning, and resuscitation could not be performed by any means. At the necropsy the heart was found to have stopped in diastole, and the right side was dilated. The veins all over the body were much distended. There was marked congestion of the liver and of the posterior parts of the lung. Thus, the toxic symptoms in man and in the lower animals are very similar. A noteworthy point is that the conjunctival reflex does not disappear and that the pulse is good and not very rapid. After the stage of muscular relaxation there are clonic spasms, which Dr. Johnson regards as a danger signal. Dr. C. R. Box has described two cases of petrol poisoning in chauffeurs who were manœuvring a motor-car about a closed garage.[1] He noted that in one case the face was flushed and cyanosed and in the other pale. In both there were muscular weakness, shivering, and spasms, but no vomiting. The pulse was rather small and fast, thus differing from Dr. Johnson's cases. Mr. M. J. Houghton has reported the case of a woman who was overcome in three minutes while washing her head with petrol in a small bathroom.[2] When seen 15 minutes later she was of an ashy-grey colour. The conjunctivæ were slightly suffused, the pupils dilated, and the lips slightly cyanosed. The pulse was 90 and thready. Dr. Fraser Gurd has, in a personal communication to Dr. Johnson, described a necropsy on a man who was found dead in a large tank which he had been cleaning with petrol. Nothing was discovered but venous congestion.

SOME INSANITARY FEATURES OF THE EXTEMPORISED PICTURE THEATRE.

THE extraordinary popularity of cinematograph exhibitions has led to the acquisition of scores, even hundreds, of buildings in which to give the demonstrations. The entertainment is perfectly wholesome and gives a cheap form of amusement and instruction to large crowds. But the evidence is plain on all sides that the buildings are not always wholesome. The cinematograph theatre is often a Black Hole of Calcutta, with no provision for ventilation at all. Especially is this the case with the extemporised theatre. Almost any old shop, in place of waiting for a trade tenant, can be adapted for the purpose of a cinematograph show, and there are many such shops in the metropolis, and doubtless in the provinces also. When a building is specially designed and ultimately constructed for the purpose we may fairly assume that the provisions for ventilation laid down by our health authorities for new buildings are followed. Whether, however, the place is a new building or an adaptation of an old shop, it is an essential of the performance to keep the actual theatre dark. The two factors of health, light and fresh air, can therefore seldom be contemporaneous even in the buildings specially designed for the purpose, while it is obvious in the case of certain of the abandoned shops which have been adapted for these exhibitions that both light and fresh air are excluded. The condition of some of these dark and unventilated enclosures is a grave comment on our modern views of what is healthy environment, and the enormous patronage which the picture theatre receives indicates how widespread may be the effects of an unhealthy stay within its walls. Evidence has been produced which suggests that such places have been a means of spreading infectious diseases particularly amongst children. Our sanitary authorities would do well to give their special attention to this matter, and initiate steps to ensure the people taking their recreation and instruction under physical surroundings that admit of no hygienic reproach.

[1] Brit. Med. Jour., April 4th, 1908, p. 807.
[2] Ibid., Dec. 12th, 1908, p. 1747.

PHLEBITIS IN MUMPS.

THE usual conception of mumps as a transient inflammation of the parotid glands attended with slight constitutional disturbance can no longer be held. Observations in recent years, principally by French clinicians, have shown that the disease may, like other infections, be attended by grave complications, such as pancreatitis, meningitis, neuritis, endocarditis, and pericarditis. For example, at a meeting of the Société Médicale des Hôpitaux of Paris M. E. Hirtz and M. Salomon reported a complication of mumps which does not appear to have previously been noticed—phlebitis. Of this they observed three cases in one household, the patients being a medical man, his wife, and his sister. The former was attacked while attending several members of a family for mumps. There was intense inflammation of the right parotid gland, and the temperature rose to 101·5° F., but fell to normal on the following days and the parotitis rapidly diminished. On the seventh day he had a rigor and the temperature rose again to 101·5°. On the eighth and ninth days it oscillated between 102·5° and 102·7° and was accompanied by malaise. On the tenth day it fell to 100·7°, but pain was felt in the right calf. On the eleventh day the temperature was again normal, but the pain persisted, compelling the patient to remain completely at rest. Examination on the fourteenth day showed a red line in the course of the internal saphenous vein, which was tender. The limb was not œdematous. On the fifteenth and sixteenth days the temperature was normal, but on the eighteenth it rose to 100°, and the femoral vein became painful. There was slight œdema over the malleoli. The limb was immobilised in a splint. The left lower limb now became painful, and acutely so in the calf. The whole of the course of the external saphenous vein was tender to the slightest touch. Recovery slowly took place under massage, electricity, and mechanical therapeutics. The patient was not able to walk normally for nearly four months. His wife, who nursed him, was seized at the time of a menstrual period with pains in the breasts and in the position of the ovaries. She also had sensation of weight in the legs. The pains increased so much that she had to take to bed. She then remarked that for some days the parotid regions were a little tender, and there was some difficulty in mastication. In the position of the right femoral, the two right saphenous, and the left saphenous veins there was marked pain. On palpation of the right iliac fossa a painful swelling was felt in the position of the right ovary. Ovaritis and phlebitis, due to mumps, were diagnosed, and the lower limbs were immobilised. The temperature did not rise above 99·3°. The affected veins formed hard cords and there was some œdema of the legs. On the ninteenth day there was intense pain in the left arm, which was attributed to neuritis due to mumps. Recovery slowly took place under the same treatment as in the previous case. The practitioner's sister,

a married woman, was attacked with mumps. Her temperature rose to 104° and there was acute pain in the ovarian regions. She slowly recovered and remained pale and wasted. About two months after the onset she went to the seaside, but after a few days had to take to bed. Her temperature rose to 104·7° and there were rigors. The temperature remained elevated for 10 days and then gradually fell. She complained of pain in the left leg, which was œdematous. The internal saphenous and the femoral veins became painful, and phlebitis was diagnosed. She was not able to get up until the fifteenth day of the disease. It is noteworthy that in the first two cases the phlebitis appeared about a week after the parotitis, while in the third case it did not appear until two months after. All the patients were run down when they contracted the disease, which partly explained its intensity and tenacity, but the infecting microbe also appeared to be unusually virulent. These cases are not completely novel. M. Hirtz and M. Salomon have been informed by Dr. Henri Béclère of a case of phlebitis in mumps observed by him. And in the *Statistique Médicale de l'Armée* for 1906 they found recorded the case of a soldier admitted to hospital for orchitis, which in consequence of an outbreak of mumps in the regiment at the time was attributed to this cause. After the temperature became normal he complained of slight pain in the right thigh, and the temperature rose again. While sitting up in bed he died suddenly. The necropsy showed phlebitis of the veins of the spermatic cord and of the epigastric vein.

THE CHARACTER OF BENVENUTO CELLINI.[1]

THE character of Cellini, as disclosed in his autobiography, has ever afforded both pleasure and food for thought to psychologists. The *Vita* has been criticised before, notably by Baretti, Bacci, Renier, and Paul Courbon. Dr. Querenghi associates himself in the main with the theory that Benvenuto Cellini inherited a nervous temperament from parents who were advanced in age at the time of his birth, that this morbid predisposition was exaggerated by the malaria, syphilis, and plague from which he was known to have suffered, that his unstable mental equilibrium was shown in his criminal impulses, obsessions, absence of moral sense, ideas of persecution and grandeur, and in sexual perversion. Dr. Querenghi is, however, at pains to disprove the accusation of homosexuality, and we think he fairly succeeds as far as the evidence in the *Vita* enables him to do so. That Cellini mismanaged and muddled his affairs is evidenced by what took place when his celebrated "Perseus" was cast. He made his furnace of pine instead of oak, nearly burned down the shed where the metal was being fused, and so miscalculated the quantity required that if he had not at the last moment thrown in his pewter pots and pans the statue would have come out headless! Dr. Querenghi finds Cellini wanting in artistic perception, as shown by his criticism of his contemporaries Donatello and Bandinelli, and he considers that as an artist he compares unfavourably with them, an opinion he seeks to maintain by contrasting his work with theirs. This view, however, will probably not be shared by the majority of artists. Evidently Cellini was utterly tactless. He preferred to go out of his way to alienate his patrons and their wives, notably Pope Clement VII., the Duchess d'Etampes, and Eleonora da Toledo, wife of Cosimo I. In these transactions the artist appears in not a very creditable light and throws the blame on bad luck instead of his own psychological deficiency. Another characteristic of Cellini's degeneracy is that he was "vindictive as a viper," as Baretti says, and quarrelled with almost all his friends. According to Dr. Querenghi the key to Cellini's mentality is to be found in self-delusion, by which he exaggerated his own condition and every aspect of his life; for example, his statement of having vomited a worm a foot long, whereas the probability is that it was a small caterpillar he had swallowed with some water. The alleged attempts to poison him and his fight with Gherardi come under the same category. In fact, megalomania is manifest even in the first lines of his *Vita*, in which he talks of the *obligation* resting on "men who have at least done something praiseworthy" to write their own biography, an obligation which was neither felt nor entertained by his more celebrated predecessors and contemporaries in the realm of art. As a result, while Cellini put down the truth as he felt it, he unconsciously drifted further away from the actual truth the more the fantastic element was present. Dr. Querenghi draws a comparison between Cellini and Don Quixote, and opines that if the Spanish knight had really existed and written his autobiography we should have had another *Vita* like that of Cellini. This is a piece of literary criticism which strikes us as a little surprising.

[1] La Psiche di Benvenuto Cellini. By Dr. Francesco Querenghi. Bergamo: Istituto Italiano d'Arti Grafiche. 1913. Pp. 56. With 16 illustrations.

THE OYSTER SUPPLY.

SOME interesting facts connected with the oyster industry were brought forward at the annual general meeting of the Oyster Merchants and Planters' Association, held in the Fishmongers' Hall on March 31st. It will be learnt with some dismay by the oyster-consuming public that the supply of natives grows shorter year by year, and unless purely empirical methods of cultivation are soon given up in favour of scientific treatment the gourmet's favourite may disappear. This is a regrettable fact, and it is to be hoped that funds will soon be forthcoming and that Government help will be given in order that a comprehensive scheme of research into the conditions which affect the spatting, growth, and fattening of the oyster may soon be proceeded with. The question has been taken up in France in a thoroughgoing spirit, with the result that the oyster industry there has been practically rehabilitated. The matter is of considerable public importance, since the shell-fish industry of the United Kingdom represents an estimated capital value round the coast of from six to eight millions, which gives employment to a large number of men and supplies a dietetic delicacy which many would be sorry to lose. Another menace to the prosperity of the industry is the alarming increase of American or "slipper" limpets, particularly in the Thames estuary, which "spat" upon the oyster grounds and consume much of the food that otherwise would go towards "fattening" the native. To some extent this mischief is being reduced by giving rewards to dredgerman who bring "limpets, five fingers and mussels, and other vermin ashore for hard way making and other purposes." The industry, assisted by the Fishmongers' Company, has worked hard during recent years to remove the reproach against the oyster as a source of enteric disease, and great efforts have been made to keep all beds clean and free from sewage-polluted water. Excellent progress has been achieved, with the result that public confidence has been largely restored. The great mass of oysters now comes from beds of certified purity, but the system of inspection needs widening. The Oyster Merchants and Planters' Association has requested the Board of Agriculture and Fisheries and the Local Government Board to see that no time be wasted in getting through a rivers pollution Bill which shall safeguard the public and protect the interests of the industry. They accept the recommendations of the Royal Commission on Sewage Disposal, which provided that control in all questions affecting our rivers

and estuaries should be vested in river boards, with a controlling authority with power to take action to prevent the pollution of the waters. In short, the attitude of the shell-fish industry in regard to sanitary considerations is admirable, and it would be a great misfortune, now that the importance of these considerations is being realised and acted upon, if the prosperity of the industry should suffer through the neglect to make a systematic scientific study of the conditions under which the best oyster can be produced and the yield increased. There are few persons, we imagine, who do not want the supply of oysters to be pure, plentiful, and cheap. They are a valuable food.

TREATMENT OF TYPHOID FEVER BY TINCTURE OF IODINE.

IN the *Journal de Médecine et de Chirurgie Pratiques* for Jan. 25th of this year is an article dealing with the treatment of typhoid fever by tincture of iodine. Although the therapeutic use of iodine in this disease was suggested as far back as 1859, and reference has been directed to the matter since, notably by Dr. David Walsh in 1907, no extensive trial seems to have been made of this method. Nevertheless some observers have claimed successful results, and further trials would certainly seem desirable. Treatment based on bacteriological observations has of recent years attracted so much attention that the employment of drugs has not been so fully investigated. Dr. G. Perez has written to the above-named journal urging that the time has arrived to put this method to an extensive practical test. The employment of drugs possessing antiseptic properties has not met with great success in the treatment of typhoid fever, but it has been suggested that tincture of iodine is not only antiseptic in its action, but helps to clean the ulcers and to hasten their cicatrisation. Its use, therefore, in typhoid fever would on these grounds be indicated. In the article to which we have referred the addition of pyramidon is recommended as an antipyretic in order to replace the employment of baths for bringing down the temperature. If a good effect could be produced with the drug it would be of advantage where the use of baths is difficult. The true value of these therapeutic measures can, however, only be estimated by extensive practical experience.

THE TRANSMISSION OF SLEEPING SICKNESS BY MORE THAN ONE SPECIES OF TSETSE FLY.

EXPERIMENTAL investigations have proved that under certain conditions Glossina morsitans as well as G. palpalis can act as the insect transmitter of sleeping sickness infection. Kinghorn and Yorke in Rhodesia have shown also that not only is G. morsitans the conveyer of the disease, but also that the particular parasite of sleeping sickness in that region is T. rhodesiense, and not T. gambiense. Rodhain and others have demonstrated that G. morsitans in the absence of G. palpalis spreads the infection of sleeping sickness in Southern Katanga. As a result, some experts now lean to the conclusion that under certain circumstances various species of glossina may probably be able to transmit various species of trypanosomes; and that possibly the individual trypanosome species are not invariably associated with individual species of glossina. Another series of experiments relating to this question has recently been reported in the *Archiv für Schiffs- und Tropen-Hygiene* for February, by Staff-Surgeon W. Fischer, of the German East African Protectorate Forces, who sought to discover if, at the altitude of the Victoria Nyanza, 4000 feet above sea level, the infection of T. gambiense could be conveyed by G. morsitans as well as by G. palpalis. For this purpose he fed G. morsitans, in groups of 100 each, on 14 infected monkeys for four days; the flies were then allowed to fast for two days, after which from the seventh to the seventieth day they were fed each day on a new healthy monkey. In 12 of the experiments the results were negative; but in two they were positive, the monkeys becoming infected. Each of the 1400 flies employed in the experiments was carefully examined after death. Three only were found to be infective, with completely developed trypanosomes in their intestines, and these had been the agents in conveying the infection to the monkeys. Twenty other flies, however, had developing trypanosomes in their gut. From these experiments it is permissible to infer that in the Victoria Nyanza region G. morsitans as well as G. palpalis can act as the vector of sleeping sickness infection.

CHRONIC MANGANESE POISONING.

IN the *Journal of the American Medical Association* of March 1st Dr. Louis Casamajor contributes a preliminary account of a syndrome which he ascribes to chronic industrial intoxication by manganese. He has seen nine patients, workers in the separating mill of a large mine, the chief product of which is zinc. Throughout this mill the air is laden with a fine grey dust, consisting of ore which contains zinc and manganese, with a negligible fraction of lead. The symptoms, which are ascribed by Dr. Casamajor to absorption of manganese through the alimentary tract, are somewhat like those of paralysis agitans; there is a similar disturbance of gait, which the patient first discovers as an inability to walk downhill slowly. The mask-like expression of face has also been noticed; the legs feel weak and shaky, there is a fine static tremor of the hands and tongue, but muscular power is well preserved and the reflexes are unaltered. There are no sensory changes, apart from deafness which is not aural in origin, and the mind shows no definite evidence of deterioration. It is the gait that is most profoundly affected, and it is noteworthy that retropulsion occurs as well as propulsion; the patient cannot walk backward, for as soon as he tries to do so he falls backward or sits down. There are no blood changes, the cerebro-spinal fluid is normal, and the Wassermann test is negative. In the urine distinct traces of zinc and manganese have been discovered. Dr. Casamajor gives reasons for attributing the symptoms to poisoning by manganese and not zinc. One of these is that zinc has never been proved responsible for systemic poisoning, and the other, that certain cases of a closely similar type have been reported among other manganese workers. He promises a fuller account of his investigations, including a record of post-mortem findings, and the subject should prove important and interesting, since it promises to add one more to the ever lengthening list of preventable diseases.

THE appointment of Mr. James Devon, L.R.C.P. & S. Edin., L.F.P.S. Glasg., as Prison Commissioner for Scotland, in place of the late Mr. T. D. M. T. Robertson, has been approved by the King.

THE BIRMINGHAM MEDICAL INSTITUTE.—The annual meeting of the members of this association was held on Thursday, March 27th, Mr. Gilbert Barling, President, in the chair. The report of the committee showed a balance on the revenue account of £56 6*s.* 4*d.* in favour of the institute at the end of 1912. In response to an appeal from the president at the previous annual meeting, the sum of £502 12*s.* had been contributed to a fund for increasing the capital of the institute, and further donations to the amount of £106 15*s.* had been promised. It was pointed out that additional support is urgently needed. A cordial vote of thanks was passed to the president for his services during the past three years, and the proceedings terminated with the election of the honorary officers for the ensuing year.

MEDICINE AND THE LAW.

Medical Practitioners and Undue Influence.

A RECENT action in the Probate Division has reminded us of how easily a medical man benefiting under the will of a deceased patient may be made the subject of a charge of having taken advantage of his position to secure his own profit. The charge is an odious one, and once made has to be faced. The strict rights of the legatee should be insisted upon, or the accusation will be deemed to have succeeded with implied admission of its truth. This was the course pursued in the litigation arising out of the will of Miss Maria Mattingley, in which the jury found, after the briefest possible deliberation, that no undue influence had been used over her by her nephew, Mr. Frederick Bryan, a medical practitioner. The case is of such a near date that we need only recall its salient points.

Practitioners are regarded by patients in some instances with gratitude, and suffer from the circumstance that owing to the privacy in which their visits usually take place, and in which the making of a will is spoken of, if it be discussed at all before the medical adviser, they have not the advantage as a rule of the testimony of others to the effect that the confidence reposed in them has been in no sense abused. On the other hand, they are frequently the objects of the suspicion of jealous relatives. Mr. Bryan had a strong point in his favour in the fact that he was the nephew of the old lady whose dispositions in his favour were disputed. Moreover, he was not only a near relative, but had done for her what any near relative should do and may do without suspicion of sinister motives in his circumstances. Renewing an acquaintance with Miss Mattingley, which had for some time been discontinued, he found her elderly, infirm, and neglected, her house dirty and ill-kept, and herself suffering from cancer of the breast. He made an end so far as he could of these undesirable conditions, and although the case seems to have been stated against him as if, by constituting himself exclusive medical adviser to his aunt, he had obtained influence over her in her business affairs, he was able to call Mr. W. H. Battle and Dr. H. H. Mills, who at different times had seen her at his request, and to rely upon their testimony as to her mental capacity. In fact, it was abundantly proved that Mr. Bryan had done so much for the testatrix that, taking into account the relationship between them, it was, at any rate, not unnatural or surprising that her most recent will should more substantially benefit him than one that preceded it, or than one the making of which was contemplated but not signed.

The law in no way forbids a medical practitioner to benefit under the will of his patient. He, like other persons, must not have exercised "undue influence"—that is to say, he must not have employed any persuasion or pressure such as would prevent the testator from exercising his judgment in a proper manner, and of course he must not have taken advantage of any mental weakness. As a general rule, however, apart from any question of ethics, the influence of a person standing in a fiduciary relation to a testator may lawfully be used to obtain a will or legacy so long as the testator thoroughly understands what he is doing and is a free agent, and of course suspicion must be confirmed by evidence when the general facts surrounding the making of a will are of a suspicious character. Suspicion will certainly and justly arise when a will confers large benefits upon the person by whom, or by whose agent, it has been prepared, or when it markedly favours a medical man in whose house the testator was residing when it was made. Neither of these two elements, however, was present in Mr. Bryan's case, except to the extent that he introduced a solicitor whom he had employed himself, and whom he knew, to make Miss Mattingley's will. That lady undoubtedly asked him to do this, and gave her own instructions personally and privately to the lawyer. It is interesting to note that among the well known cases in which the question of undue influence has been discussed with reference to a medical man and his patient is one in which, as in that of Mr. Bryan, there was a testatrix who was the aunt of the person benefited, and was also a lady of considerable age. In this case, Reece *v.* Pressey, decided in 1856, the nephew was the medical attendant of the testatrix and drew up her will himself. He took under it the whole of her property except £100, which went to his sister, who disputed the will. He was alone with his aunt on the occasions when she discussed her testamentary intentions and wishes with him, so that his evidence as to what took place between them stood alone. He stated as to this that his aunt wished him to draft the will so that it gave him everything, and that he refused to do so, suggesting that half the property to be disposed of should go to his sister, with the result that the testatrix yielded to his wishes only so far as to consent to the sister receiving a legacy of £100. There were letters to him from his aunt asking him to come and see her, and referring to business which she wished him to help her to settle; there was evidence also that she was of sound mind, though feeble in body; and eventually the court pronounced in favour of the will, which, of course, was duly signed and witnessed. In another case, Jones *v.* Godrich, also decided many years ago, there was even more occasion to suggest undue influence, for, although the testatrix had no near relatives, she had distant ones in whose favour she had already made a will, and her medical attendant, to whom she left the bulk of her property by the will in dispute, was not related to her. Moreover, she resided in his house, and was 86 years of age when she died. The will nevertheless was upheld by the court, and it was laid down that in order to invalidate it there must be evidence of undue influence practised with respect to the will itself, or so contemporaneously with the making of it or connected with it as by almost necessary presumption to affect it. "Flattery and obsequiousness" were referred to as methods degrading to the person using them, but not in themselves constituting such undue influence on the acts of a capable testatrix.

In short, the medical practitioner to whom a bequest is made may become the subject of suspicion, but in order to deprive him of what is otherwise his lawful due a strong case must be made out, as with other legatees occupying positions of confidence with regard to the person whose will is in question. It may be shown that influence has been used, but mere influence is not enough. It must have been of such a degree as to have deprived the person making the will of the proper mastery of his or her faculties. Nor do we see any ethical, as distinct from any legal, reason why a medical practitioner should not benefit to a reasonable extent under the will of a patient who may desire to express his gratitude for services rendered upon which he may set a higher value than that represented by fees paid upon a customary scale. We, of course, do not suggest that "influence" of any kind should be used deliberately by medical practitioners or by anyone else in order to obtain legacies. The idea is repulsive to every honourable and well-balanced mind. Each case of alleged influence, however, must depend upon its own facts and circumstances, which differ widely, and however hard it may seem to relatives of a deceased person to be excluded from his will it is as well to remember that not all relatives love one another, and that the gift to a person who is not related may be due to this rather than to any other fact. A legacy to a friend instead of to a relative may simply take the place of a bequest to a charitable institution which no one could accuse of exercising undue influence. Nothing has been said above as to gifts made by a person when alive to his medical attendant, or to any other person whose position of trust brings him under the suspicion of having obtained such a donation by improper means. In general, no medical man could prudently accept from a patient under his care a present representing a substantial part of the donor's property; we refer to such a gift as in an ordinary case would not be bestowed except after death with all the formalities attendant upon the making and proving of a will. At all events, on any such occasion the medical man should put himself beyond the range of suspicion by insisting upon everything being done under competent legal advice, and in such a manner as to secure full protection for his patient and for what is not less important in very censorious times, his own credit.

Questions Arising under a Partnership Agreement.

An action was brought recently in the Chancery Division by Mr. W. G. H. M. Verdon against Dr. R. D. Bell, medical men practising at Luton, in which the former sought to test the validity of a notice served upon him by the latter to dissolve their partnership. In opening the case counsel explained that the defendant, the survivor of a partnership,

had taken the plaintiff into partnership in 1909, the plaintiff paying to a retiring partner of the defendant a substantial sum in respect of a share in the goodwill of the practice. The articles of partnership stated in some detail conditions under which the plaintiff and defendant should practise together, and the notice referred to gave particulars of alleged breaches of those conditions complained of by the defendant. After counsel for the plaintiff had opened the case as stated, counsel for the defendant intimated that he thought that the matters in dispute might be arranged between the parties if Mr. Justice Warrington would give them and their counsel the opportunity to come together. Accordingly the hearing of the case was adjourned, and upon its being called on again it was announced that a settlement had been arrived at. The terms, so far as they were stated, were to the effect that the partnership should be dissolved, a substantial sum being paid to the plaintiff by the defendant; that an accountant should be called in to settle the accounts of the partnership; and that each partner should be at liberty to practise in Luton, retaining his own patients and any appointments that he might hold. All charges that had been made were withdrawn, and upon the application of counsel an order was made to stay the proceedings.

Action against Original Vendor of Diseased Pork.

In the case of Cointat *v.* T. Myham and Son, recently heard by Mr. Justice Coleridge, the jury found a verdict for the plaintiff in the following circumstances. The tuberculous carcass of a pig was seized by a sanitary inspector on the premises of Mr. Cointat, where it was admittedly exposed for sale as food, and he being convicted was fined £20 under Section 47, subsection 2, of the Public Health (London) Act, 1891. The subsequent action referred to was brought by Mr. Cointat, who had exposed the diseased pork in ignorance that it was unfit for human food, against the firm which had sold the pig's carcass to him for breach of an implied warranty that it was merchantable and reasonably fit for food. The jury found that the meat was unfit for human food, that the plaintiff had impliedly told the defendants for what purpose he was buying it from them, and that he did so in such a way as to show that he relied on their skill and judgment. The damages which the plaintiff claimed consisted, firstly, of the amount of his fine and costs, as to which the jury awarded him £36; and, secondly, were for loss of custom owing to the breach of warranty, as to which the jury awarded £200. Mr. Justice Coleridge delivered a reserved judgment upon these findings, the question being whether the damages under both or either of the two heads indicated were recoverable at law. This involved the consideration of whether they arose naturally out of the breach of the contract and could fairly and reasonably be considered to have been in the contemplation of both parties as the probable result of the breach of the contract at the time of making it. As to the damages arising out of the conviction, his lordship had little difficulty in arriving at the conclusion that they were not too remote. Absence of negligence would have been no defence to the plaintiff when prosecuted and consequently his conviction did not imply negligence on his part. There was no suggestion that the fine had been increased owing to any such negligence. Consequently Mr. Justice Coleridge held that the damages arising directly out of the conviction were recoverable, being within the principle of the leading cases on the subject of damages. (Hadley *v.* Baxendale, 9 Exch. 341; Crage *v.* Fry, 67, J.P. 240.) The question of damages arising from loss of business consequent upon the prosecution required more consideration, but after reviewing the cases upon the subject of remoteness his lordship held that the plaintiff might recover, on the ground that the loss of custom might be taken to have been in the contemplation of the seller at the time of making the contract as a reasonable consequence of a breach of it on his part. Judgment was accordingly given in the plaintiff's favour for the amount of the findings of the jury.

THE ASSOCIATION OF INFANT CONSULTATIONS AND SCHOOLS FOR MOTHERS.—The mothercraft competitions organised by this association with a view to testing the skill of the mothers attending these societies in London will take place on Saturday afternoon, April 12th (the last day of Health Week).

Public Health.

REPORTS OF SCHOOL MEDICAL OFFICERS.

City of York.—The report for 1911 presented by Dr. Edmund M. Smith (school medical officer) and Mr. E. E. Scott Galbraith (assistant school medical officer) is a clearly written, well presented piece of work, useful for both local and general purposes. Particularly to be commended is the inclusion of a section dealing with the work of the whole county, and presenting for consideration useful suggestions that have been made in other localities and which are suitable for general application. The facilities for treatment consist of a staff of three half-time school nurses (half employed as health visitors), who "follow up" cases, and of a clinic for such ailments of school children as ringworm, blepharitis, debility, and otorrhœa. An arrangement has also been made for the treatment of certain cases of ringworm by X rays at the York County Hospital. The scope of treatment is, however, to be extended by the appointment of an expert assistant ophthalmic school medical officer, a dental assistant school medical officer, and by giving facilities for the obtaining of cheap spectacles. During the year nine schools were seriously affected by an epidemic of ophthalmia, and two schools were closed from June 27th and June 30th respectively until after the summer holiday. The medical officers hope to record in the next report the establishment of an open-air school and of special classes for stammerers and for children nearly blind.

East Sussex County Council.—Mr. Alexander G. R. Foulerton reports that good arrangements for "following up" cases of defective children are made in East Sussex by arrangements with the local and county nursing associations, but the precise effect of these measures in obtaining treatment is not stated. A special report by Dr. Arthur Beeley finds that the nutrition of boarded-out children compares favourably with those in the workhouse. Mr. George Finch considers the question of the mid-day meal of children, who attend schools in the country districts and take a dinner basket to school. The dinners provided are very frequently unsatisfactory. A proposal is made to allow older girls to prepare a simple meal, and a useful menu is submitted as suggested by an evidently vigorous and alert woman teacher.

County Borough of Stockport.—The work in this town in 1911 was carried on by Dr. M. Gertrude Edis and a school nurse under the superintendence of Mr. H. E. Corbin. A "clerical assistant" also assists the medical officer during the inspections with the hope of setting the nurse free to get more treatment carried out. All the children having ringworm were kept under observation at two centres and made 702 attendances there. Arrangements for treatment, however, are not very effective. Practically no treatment even exists for defects of vision, and no treatment of any kind has been undertaken by the authority.

County of Kincardineshire.—The report of Dr. W. A. Macnaughton extends over the school year ending July 31st, 1912, and deals with the examination of 2179 children, of whom only 878 are returned as defective, including clothing and cleanliness. The standards used in estimating defects are not always, however, available in the report. A move is now to be made in the direction of "treatment," as a small Treasury grant is available for the purpose. One delightful feature of the report is that which records the effectiveness of the apparently unofficial arrangements which exist for the provision of a hot meal at midday for children at rural schools. Reciprocal services between school teachers and farmers result in good meals at trifling cost, much of the food being presented. A notice sent to a child with seriously defective vision brought the following reply, not quite to the point:

SIR,—Send no more notices, my child is clean and healthy, and I will see that she does not attend your medical examination again.

Western Australia.—Mr. James W. Hope, principal medical officer for Western Australia, who also performs the duties of chief school medical officer, has an interesting account to give in his 1911 report of the progress of medical inspection of school children in that colony. The scheme of inspection was introduced in the year under notice, and it is hoped that within two years every child in

the State will have passed under review. The total number of school children in 1911 was 35,476, and 7784 were examined up to the end of the year. The officers appointed for this work were the local medical officers of health or, in districts where no such official existed, the Government district medical officer. The central Government pays for the inspection a fee of 1*s.* per child inspected, *plus* charges for mileage and for "sustenance." Parents do not appear to be invited to the inspection, but they are informed of any defects found, and the intention is that if the parents are unable to provide the necessary medical treatment this shall be given at one of the Government institutions. Already the revelation of the prevalence of dental caries has led to the institution of a voluntary dental clinic, and a Government dental hospital is called for by the dentists. The plan of inspection and treatment is of a thorough character, and is partly modelled on that issued by the Board of Education in England. School nurses were appointed to assist certain of the medical officers from the beginning of the work. The percentages of defects found differ in some respects from those in England, but without knowing the methods and criteria applied by the inspectors detailed comparison is not profitable as the possible variations of opinion are so wide. But fewer serious dental defects are recorded, and more defects of vision and enlarged tonsils. Only 4 cases of phthisis were recorded in the 7784 children, and there were only 2 other cases of tuberculous disease. The children examined were distributed through 76 schools, with numbers on the roll varying from 7 to 708, the latter being one of those at Kalgoorlie; but of 406 defective children here (excluding teeth and cleanliness) only 84 took action to get treatment. In Australia, as in England, the school clinic would seem to follow as the corollary to school medical inspection. We must heartily congratulate Mr. Hope on the thorough way in which the problem of inspection has been tackled, and trust that of the mistakes and experiences of this country and of Germany full advantage will be taken. We are especially pleased to notice the attention paid to the open-air school. There would seem little reason in Australia why every school should not be an open-air school, and taxpayers, teachers, and taught be freed from the expense and tyranny of too much and too solid bricks and mortar.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, and whose aggregate population at the middle of this year is estimated at 17,852,766 persons, 7794 births and 5636 deaths were registered during the week ended Saturday, March 22nd. The annual rate of mortality in these towns, which had been 18·0, 17·4, and 17·0 per 1000 in the three preceding weeks, further declined to 16·5 per 1000 in the week under notice. During the first twelve weeks of the March quarter of this year the mean annual death-rate in these towns averaged 16·9, against 17·5 per 1000 in London during the same period. The death-rates during the week under review ranged from 7·1 in Hornsey, 7·7 in Smethwick, 8·1 in Bournemouth, and 9·6 in Ilford and in Willesden, to 23·8 in Stoke-on-Trent, 24·2 in West Bromwich and in Dewsbury, 24·4 in Plymouth, and 26·7 in Rotherham.

The 5636 deaths from all causes were 181 below the number recorded in the previous week, and included 451 which were referred to the principal epidemic diseases, against 439 and 464 in the two preceding weeks. Of these 451 deaths, 220 resulted from measles, 72 from whooping-cough, 67 from infantile diarrhœal diseases, 51 from diphtheria, 28 from scarlet fever, and 13 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases was equal to 1·3, against 1·3 and 1·4 in the two preceding weeks. The deaths attributed to measles, which had been 263, 206, and 229 in the three preceding weeks, slightly fell to 220, and caused the highest annual death-rates of 2·2 in Walsall, 2·3 in Plymouth, 2·4 in Barrow-in-Furness, 2·7 in Wolverhampton, 3·4 in Wigan, 3·7 in St. Helens, and 9·1 in West Bromwich. The deaths referred to whooping-cough, which had been 78, 68, and 83 in the three preceding weeks, declined to 72, and included 23 in London, 8 in Liverpool, 6 in Stoke-on-Trent, 4 in Nottingham, and 3 in Manchester. The fatal cases of diarrhœa and enteritis (among infants under 2 years of age), which had been 76, 81, and 69 in the three preceding weeks, were 67 in the week under notice; 25 deaths were recorded in London, 6 in Liverpool, 4 in Manchester, 3 in Stoke-on-Trent, 3 in Birmingham, and 3 in Salford The 51 deaths attributed to diphtheria were 1 below the average number in the five preceding weeks, and included 8 in London, 5 in Birmingham, 4 in Manchester, 3 in Liverpool, and 3 in Barrow-in-Furness. The deaths referred to scarlet fever, which had been 29, 18, and 23 in the three preceding weeks, rose to 28; 5 deaths were registered in Birmingham, 4 in London, 4 in Manchester, 2 in Preston, and 2 in Newport (Mon.). The fatal cases of enteric fever, which had been 8, 12, and 9 in the three preceding weeks, rose to 13, and included 2 in Rochdale and 2 in Hull.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had steadily declined from 2112 to 1556 in the twelve preceding weeks, had further fallen to 1514 on Saturday, March 22nd; 156 new cases were admitted during the week, against 183, 160, and 164 in the three preceding weeks. These hospitals also contained on the 22nd ult. 930 cases of measles, 905 of diphtheria, 284 of whooping-cough, and 43 of enteric fever, but not one of small-pox. The 1490 deaths from all causes in London were 36 fewer than the number in the previous week, and were equal to an annual death-rate of 17·2 per 1000. The deaths referred to diseases of the respiratory organs, which had been 453, 403, and 405 in the three preceding weeks, declined to 390, but were 144 above the number recorded in the corresponding week of last year. The deaths attributed to influenza, which had been 25, 40, and 53 in the three preceding weeks, further rose to 65 in the week under notice.

Of the 5636 deaths from all causes in the 96 towns, 159 resulted from different forms of violence and 366 were the subject of coroners' inquests. The causes of 47, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Leeds, Bristol, Bradford, Hull, Newcastle-on-Tyne, Nottingham, and in 53 other smaller towns. The 47 uncertified causes of death included 9 in Birmingham, 5 in Darlington, 4 in Liverpool, 4 in Gateshead, and 3 in Southend-on-Sea.

In the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, and whose aggregate population at the middle of this year is estimated at 17,852,766 persons, 8620 births and 5792 deaths were registered during the week ended Saturday, March 29th. The annual rate of mortality in these towns, which had steadily declined from 18·0 to 16·5 per 1000 in the four preceding weeks, rose to 16·9 per 1000 in the week under notice. During the 13 weeks of the quarter just ended the mean annual death-rate in these towns averaged 16·9 against 17·5 per 1000 in London during the same period. The death-rates in the several towns last week ranged from 7·6 in Eastbourne, 9·3 in Wallasey, 9·6 in Enfield and in Gillingham, and 9·9 in Willesden, to 22·6 in West Bromwich, 23·1 in Stoke-on-Trent, 23·9 in Wakefield, 24·5 in Wolverhampton, and 24·6 in Bootle.

The 5792 deaths from all causes in the 96 towns were 156 in excess of the number in the previous week, and included 410 which were referred to the principal epidemic diseases, against 464 and 451 in the two preceding weeks. Of these 410 deaths, 208 resulted from measles, 71 from infantile diarrhœal diseases, 67 from whooping-cough, 37 from diphtheria, 19 from scarlet fever, and 8 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases last week was equal to 1·2 per 1000, against 1·4 and 1·3 in the two preceding weeks. The deaths attributed to measles, which had been 206, 229, and 220 in the three preceding weeks, declined to 208 last week, and caused the highest annual death-rates of 2·6 in Bolton, 2·7 in Wimbledon, 2·8 in Smethwick, 3·0 in Edmonton and in Stockton-on-Tees, 3·1 in St. Helens, 3·5 in Bury, and 4·1 in Gloucester. The deaths of infants (under 2 years of age) referred to diarrhœa and enteritis, which had been 81, 69, and 67 in the three preceding weeks, slightly rose to 71 last week, and included 18 in London, 6 in Birmingham, 6 in Liverpool, 4 in West Ham,

and 4 in Salford. The fatal cases of whooping-cough, which had been 68, 83, and 72 in the three preceding weeks, fell to 67 last week; 22 deaths were registered in London, 4 in Birmingham, 4 in Liverpool, and 3 each in Brighton, in Manchester, and in Newcastle-on-Tyne. The deaths attributed to diphtheria, which had been 54, 51, and 51 in the three preceding weeks, declined to 37 last week, which was the lowest number recorded in any week of the past quarter; 12 deaths were recorded in London, 3 in Birmingham, 2 in Manchester, and 2 in Leeds. The deaths referred to scarlet fever, which had been 18, 23, and 28 in the three preceding weeks, declined to 19 last week, of which number 3 occurred in Birmingham, and 2 in Leeds. The fatal cases of enteric fever, which had been 12, 9, and 13 in the three preceding weeks, fell to 8 last week, and included 2 which were recorded in Manchester.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospital, which had steadily declined from 2112 to 1514 in the 13 preceding weeks, had further fallen to 1455 on Saturday last; 168 new cases were admitted during the week, against 160, 164, and 156 in the three preceding weeks. These hospitals also contained on Saturday last 908 cases of diphtheria, 880 of measles, 290 of whooping-cough, and 42 of enteric fever, but not one of small-pox. The 1510 deaths from all causes in London were 20 in excess of the number in the previous week, and were equal to an annual death-rate of 17·4 per 1000. The deaths referred to diseases of the respiratory organs, which had declined from 453 to 390 in the four preceding weeks, further fell to 380 last week, but were no fewer than 189 above the number registered in the corresponding week of last year. The deaths attributed to influenza numbered 46, against numbers steadily rising from 25 to 65 in the four preceding weeks.

Of the 5792 deaths from all causes in the 96 towns, 219 resulted from different forms of violence, and 470 were the subject of coroners' inquests. The causes of 51, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Leeds, Bristol, West Ham, Bradford, Newcastle-on-Tyne, Portsmouth, Salford, and in 65 other smaller towns. Of the 51 uncertified causes of death, 13 were registered in Birmingham, 7 in Liverpool, 4 in Darlington, 3 in Bootle, and 2 each in London, Preston, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,259,600 persons at the middle of this year, 1032 births and 795 deaths were registered during the week ended Saturday, March 22nd. The annual rate of mortality in these towns, which had been 20·7, 19·9, and 18·8 per 1000 in the three preceding weeks, further declined to 18·4 per 1000 in the week under notice. During the first 12 weeks of the March quarter of this year the mean annual death-rate in these Scotch towns averaged 19·3, against 16·9 per 1000 in the 96 large English towns during the same period. Among the several Scotch towns the death-rate during the week under review ranged from 4·1 in Hamilton, 9·8 in Clydebank, and 12·0 in Kilmarnock to 20·1 in Greenock, 20·5 in Aberdeen, and 20·8 in Leith.

The 795 deaths from all causes were 21 fewer than the number in the previous week, and included 88 which were referred to the principal epidemic diseases, against numbers steadily increasing from 65 to 86 in the five preceding weeks. Of these 88 deaths, 55 resulted from whooping-cough, 18 from infantile diarrhœal diseases, 5 from measles, 5 from scarlet fever, 3 from diphtheria, and 2 from enteric fever, but not one from small-pox. These 88 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·0, against 1·3 per 1000 in the 96 large English towns. The deaths attributed to whooping-cough, which had been 55, 49, and 50 in the three preceding weeks, rose to 55, and included 33 in Glasgow, 7 in Edinburgh, 6 in Leith, 3 in Aberdeen, and 2 in Greenock. The deaths of infants (under 2 years of age) referred to diarrhœa and enteritis, which had been 7, 15, and 17 in the three preceding weeks, were 18 in the week under notice; 8 deaths were registered in Glasgow, 4 in Aberdeen, 2 in Edinburgh, and 2 in Paisley. The fatal cases of measles numbered 5, against 7, 3, and 6 in the three preceding weeks, and comprised 4 in Glasgow and 1 in Falkirk. Five deaths, of which 3 occurred in Glasgow, were attributed to scarlet fever, against 4 in each of the three preceding weeks. The deaths referred to diphtheria, which had been 5, 12, and 9 in the three preceding weeks, declined to 3 and comprised 2 in Aberdeen and 1 in Glasgow. The 2 fatal cases of enteric fever were recorded in Kilmarnock and Falkirk respectively.

The deaths referred to diseases of the respiratory system in the 16 Scotch towns, which had been 180, 185, and 144 in the three preceding weeks, rose to 166 in the week under notice; 25 deaths were attributed to the several forms of violence, against 30 and 22 in the two preceding weeks.

In the 16 largest Scotch towns with an aggregate population estimated at 2,259,600 persons at the middle of this year, 1218 births and 744 deaths were registered during the week ended Saturday, March 29th. The annual rate of mortality in these towns, which had steadily fallen from 20·7 to 18·4 per 1000 in the four preceding weeks, further declined to 17·2 per 1000 in the week under notice. During the 13 weeks of the quarter just ended the mean annual death-rate in these Scotch towns averaged 19·1, against 16·9 per 1000 in the 96 large English towns during the same period. Among the several towns the death-rates last week ranged from 9·0 in Kilmarnock, 9·2 in Ayr, and 13·4 in Perth, to 20·1 in Greenock, 22·1 in Aberdeen, and 24·7 in Leith.

The 744 deaths from all causes were 51 fewer than the number in the previous week, and included 83 which were referred to the principal epidemic diseases, against numbers steadily increasing from 65 to 88 in the six preceding weeks. Of these 83 deaths, 44 resulted from whooping-cough, 17 from infantile diarrhœal diseases, 9 from measles, 7 from diphtheria, 3 from enteric fever, and 3 from scarlet fever, but not one from small-pox. These 83 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·9, against 1·2 per 1000 in the 96 large English towns. The deaths attributed to whooping-cough, which had been 49, 50, and 55 in the three preceding weeks, declined to 44 last week, and included 29 in Glasgow, 4 in Leith, 3 in Edinburgh, 3 in Greenock, 2 in Aberdeen, and 2 in Motherwell. The deaths of infants (under 2 years of age) referred to diarrhœa and enteritis, which had increased from 7 to 18 in the four preceding weeks, were 17 last week; of this number 9 occurred in Glasgow, 2 in Dundee, and 2 in Aberdeen. The fatal cases of measles, which had been 3, 6, and 5 in the three preceding weeks, rose to 9 last week, and included 4 in Glasgow and 2 in Aberdeen. The deaths attributed to diphtheria, which had fallen from 12 to 3 in the three preceding weeks, rose to 7 last week; 3 deaths were registered in Glasgow and 2 in Aberdeen. The 3 deaths referred to scarlet fever were slightly below the average in recent weeks, and comprised 2 in Glasgow and 1 in Aberdeen. The 3 fatal cases of enteric fever were recorded in Glasgow, Aberdeen, and Falkirk respectively.

The deaths referred to diseases of the respiratory system, which had been 185, 144, and 166 in the three preceding weeks, declined to 154 last week; 17 deaths were attributed to different forms of violence, against 22 and 25 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland with an aggregate population estimated at 1,199,180 persons at the middle of this year, 546 births and 499 deaths were registered during the week ended Saturday, March 22nd. The annual rate of mortality in these towns, which had been 23·1, 23·2, and 23·4 per 1000 in the three preceding weeks, declined to 21·7 per 1000 in the week under notice. During the first twelve weeks of the March quarter of this year the mean annual death-rate in these Irish towns averaged 22·1 per 1000; in the 96 large English towns the corresponding death-rate did not exceed 16·9, while in the 16 Scotch towns it was equal to 19·3 per 1000. The annual death-rate in the week under review was equal to 21·6 in Dublin (against 17·2 in London and 19·5 in Glasgow), 25·0 in Belfast, 21·1 in Cork, 11·4 in Londonderry, 20·3 in Limerick, and 3·8 in Waterford, while in the remaining 21 smaller towns the mean death-rate was equal to 20·5 per 1000.

The 499 deaths from all causes in the 27 Irish towns were 40 below the number in the previous week, and included 36 which were referred to the principal epidemic diseases, against 38 in each of the two preceding weeks. Of

these 36 deaths, 14 resulted from measles, 7 from infantile diarrhœal diseases, 6 from enteric fever, 4 from whooping-cough, 2 from scarlet fever, 2 from diphtheria, and 1 from typhus, but not one from small-pox. The 36 deaths from the principal epidemic diseases were equal to an annual death-rate of 1·6 per 1000; in the 96 large English towns the corresponding rate did not exceed 1·3, while in the 16 Scotch towns it was equal to 2·0 per 1000. The deaths attributed to measles, which had been 16, 18, and 13 in the three preceding weeks, were 14 in the week under notice, and comprised 6 in Newry, 5 in Belfast, 2 in Cork, and 1 in Wexford. The deaths of infants (under 2 years of age) referred to diarrhœa and enteritis, which had been 9, 9, and 11 in the three preceding weeks, declined to 7, and included 4 in Dublin, 2 in Belfast, and 1 in Larne. The fatal cases of enteric fever, which had been 3 in each of the two preceding weeks, rose to 6; 3 deaths were registered in Dublin, 2 in Sligo, and 1 in Kilkenny. Of the 4 deaths attributed to whooping-cough, which were slightly below the average in recent weeks, 2 occurred in Dublin. The 2 fatal cases of scarlet fever were recorded in Belfast, those of diphtheria in Belfast and Sligo respectively, and that of typhus in Dublin.

The deaths referred to diseases of the respiratory system, which had been 143, 156, and 136 in the three preceding weeks, were 138 in the week under review. Of the 499 deaths from all causes, 143, or 29 per cent., occurred in public institutions, and 4 resulted from different forms of violence. The causes of 14, or 2·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death did not exceed 0·8 per cent.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,199,180 persons at the middle of this year, 683 births and 547 deaths were registered during the week ended Saturday, March 29th. The annual rate of mortality in these towns, which had been 23·2, 23·4, and 21·7 per 1000 in the three preceding weeks, rose to 23·8 per 1000 in the week under notice. During the 13 weeks of the quarter just ended the mean annual deate-rate in these Irish towns averaged 22·2 per 1000; in the 96 large English towns the corresponding death-rate did not exceed 16·9, while in the 16 Scotch towns it was equal to 19·1 per 1000. The death-rate last week was equal to 24·2 in Dublin (against 17·4 in London and 17·6 in Glasgow), 24·5 in Belfast, 22·4 in Cork, 20·3 in Londonderry, 27·1 in Limerick, and 32·3 in Waterford, while in the remaining 21 smaller towns the mean rate did not exceed 21·2 per 1000.

The 547 deaths from all causes in the 27 Irish towns were 48 in excess of the number in the previous week, and included 46 which were referred to the principal epidemic diseases, against 38 and 36 in the two preceding weeks. Of these 46 deaths, 17 resulted from measles, 10 from whooping-cough, 8 from diphtheria, 8 from infantile diarrhœal diseases, 2 from enteric fever, and 1 from scarlet fever, but not one from small-pox. These 46 deaths from the principal epidemic diseases were equal to an annual death-rate of 2·0 per 1000; in the 96 large English towns the death-rate from these diseases did not exceed 1·2, while in the 16 Scotch towns it was 1·9 per 1000. The deaths attributed to measles, which had been 18, 13, and 14 in the three preceding weeks, slightly rose to 17 last week, and included 8 in Belfast, 5 in Newry, and 2 in Cork. The deaths referred to whooping-cough, which had averaged 5 in the three preceding weeks, rose to 10 last week, and comprised 7 in Dublin, 2 in Waterford, and 1 in Larne. Of the 8 fatal cases of diphtheria, which were double the average in the preceding weeks of the quarter, 6 were registered in Dublin, 1 in Belfast, and 1 in Larne. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 9, 11, and 7 in the three preceding weeks, were 8 last week, and included 4 in Dublin and 2 in Belfast. The 2 deaths referred to enteric fever were recorded in Cork and Lisburn respectively, and the fatal case of scarlet fever in Belfast.

The deaths referred to diseases of the respiratory system, which had been 156, 136, and 138 in the three preceding weeks, declined to 122 in the week under notice. Of the 547 deaths from all causes, 170, or 31 per cent., occurred in public institutions, and 14 resulted from different forms of violence. The causes of 19, or 3·5 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been notified:—Staff-Surgeons: J. Thornhill to the *Endymion*; and H. Woods to the *Vivid*, for R.N. Barracks.

ARMY MEDICAL SERVICE.

Colonel Edmund J. E. Risk is placed temporarily on the half-pay list on account of ill-health (dated March 27th, 1913).

Lieutenant-Colonel Henry M. Sloggett, from the Royal Army Medical Corps, to be Colonel (dated March 27th, 1913).

ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenants are restored to the establishment from the seconded list (dated April 1st, 1913):—Robert G. Shaw, Alexander L. Urquhart, and Avenell F. C. Martyn.

Colonel R. Kirkpatrick, C.M.G., has taken up duty as Assistant Director of Medical Services to the Abbottabad and Sialkot Brigades of the Second (Rawal Pindi) Division, Northern Army in India, in succession to Colonel R. I. D. Hackett, placed on retired pay.

Lieutenant-Colonel H. P. G. Elkington, Senior Medical Officer and in charge of the Military Hospital at Shorncliffe, has been selected for the increased rate of pay under Article 317 of the Royal Warrant for Promotion. Lieutenant-Colonel A. W. Bewley, on return home from the Seventh (Meerut) Division, tour expired, has been appointed to the Northern Command for duty at York. Lieutenant-Colonel A. R. Aldridge, C.S.I., has been appointed in charge of the Medical Division of the Royal Herbert Hospital at Woolwich. Lieutenant-Colonel A. T. I. Lilly has been transferred from the Military Hospital at Colaba, Bombay, to Belgaum Cantonment. Lieutenant-Colonel S. Macdonald has taken up duty at Salisbury, on transfer from the London District. Lieutenant-Colonel L. Way has been transferred from the Military Hospital at Chakrata, Mussooree Hills, to Bareilly Cantonment. Lieutenant-Colonel R. J. Copeland has joined the Military Hospital at York. Lieutenant-Colonel F. R. Newland has been selected to hold charge of the Military Hospital at Dover.

Major C. E. P. Fowler has taken up the appointment of Instructor in Army Sanitation at the Royal Army Medical Corps School of Instruction, Aldershot, in succession to Lieutenant-Colonel A. R. Aldridge, C.S.I. Major H. W. K. Read has left Pontefract for a tour of service in India. Major S. J. C. P. Perry has been transferred from Belgaum Cantonment to the Military Hospital at Colaba, Bombay. Major A. D. Waring has been appointed to the Southern Command. Major J. W. S. Seccombe has taken up duty at the Military Hospital, Plymouth. Major A. H. O. Young has left Strensall for a tour of service in India. Major T. C. Mackenzie, D.S.O., has arrived home on leave of absence from Egypt. Major R. McK. Skinner has been appointed to the Irish Command.

Captain G. P. A. Bracken has arrived home on eight months' leave of absence from Malapuram, Madras Presidency. Captain G. A. D. Harvey has joined the Royal Army Medical College. Captain E. W. M. Paine has been appointed for duty to the Western Command. Captain B. Varvill has been transferred from the Military Hospital at Quetta to Nasirabad Cantonment. Captain F. Forrest has been appointed to the Military Hospital at the Curragh Camp. Captain A. W. Gater has taken up duty at Winchester. Captain G. F. Rudkin has arrived home on six months' leave from Fort St. George, Madras. Captain R. D. O'Connor has been appointed to the Military Hospital at Lahore. Captain H. V. B. Byatt has been transferred from the Military Hospital at Poona Cantonment to Purandhur. Captain F. H. Bradley has taken up duty at the Military Hospital, Lucknow Cantonment. Captain E. M. O'Neill has been appointed to the Cork District. Captain C. R. M. Morris has been appointed to the Southern

Command. Captain W. H. Purdon has arrived home on leave of absence from Cannanore.

INDIAN MEDICAL SERVICE.

Director-General the Honourable Sir C. Pardey Lukis, K.C.S.I., has been granted combined leave of absence home from India for seven months, with effect from April 10th.

Lieutenant-Colonel B. H. Deare has been selected for appointment as Officiating Principal of the Government Medical College, Calcutta, during the absence on nine months' leave of Lieutenant-Colonel J. T. Calvert. Lieutenant-Colonel F. R. Ozzard has been granted one year's leave of absence home from India. Lieutenant-Colonel J. M. Crawford has been granted eight and a half months' leave.

Major E. C. MacLeod has been selected for appointment as a Civil Surgeon of the First Class under the Assam Administration. Major F. O. N. Mell has been granted 19 months' privilege leave home. Major J. C. Robertson has been nominated an additional Member of the Legislative Council of the Viceroy and Governor-General of the East Indies, in succession to Sir C. Steward-Wilson, K.C.I.E., resigned. Major A. T. Gage has been granted one year and eight months' combined leave of absence. Major E. F. Gordon-Tucker has relinquished charge of the Common Prison at Bombay. Major P. P. Kilkelly has been allowed an extension of furlough on medical certificate for six months. Major C. W. F. Melville has been selected for appointment as Deputy Assistant Director of Medical Services (Mobilisation Branch) to the First (Peshawar) Division *sub pro tem.*

Captain C. F. Marr has been selected for appointment as Officiating Medical Storekeeper to the Government of India at Lahore Cantonment, in succession to Major A. A. Gibbs, granted leave of absence. Captain G. T. Davy has been selected for appointment as Specialist in the Prevention of Disease. Captain F. S. Smith has been placed on special duty in connexion with serological work under Lieutenant-Colonel W. W. Sutherland. Captain M. L. Puri has been selected for appointment as Substantive Medical Officer to the 112th Infantry. Captain V. B. Nesfield has been appointed to officiate as Chemical Examiner, Government Analyst, and Bacteriologist for the United Provinces of Agra and Oudh and the Central Provinces, *vice* Dr. E. H. Hankin. The services of Captain H. C. Brown have been placed temporarily at the disposal of the United Provinces of Agra and Oudh. Captain A. W. Howlett, officiating civil surgeon at Mussooree, has been selected for appointment as Officiating Superintendent of the Central Prison at Bareilly. Captain C. C. Shaw has taken up duty as Medical Officer to the Raipur Central Jail. The services of Captain C. H. Barber have been replaced at the disposal of the Commander-in-Chief in India.

TERRITORIAL FORCE.

Royal Army Medical Corps.

2nd South Midland Field Ambulance, Royal Army Corps: The undermentioned officers resign their commissions (dated March 29th, 1913): Major Seymour G. Barling and Lieutenant Samuel G. Webb. Captain George W. Craig to be Major (dated March 29th, 1913).

Attached to Units other than Medical Units.—Captain Alfred Alwyne Hingston, from the 2nd South Midland Field Ambulance, Royal Army Medical Corps, to be Captain (dated Feb. 18th, 1813).

For attachment to Units other than Medical Units.—John Thompson Shaw to be Lieutenant (dated March 29th, 1913).

DEATHS IN THE SERVICES.

Brigade-Surgeon Charles Frederick Oldham, late I.M.S., in his eighty-second year, at his residence, Great Bealings, Suffolk, on March 23rd. He served with the Perak expedition in 1875–76, and for his services received the medal with clasp. Later he took part in the Afghan war of 1878–79; also served with the Thal Chotiali field force and again received a medal.

Surgeon-Lieutenant-Colonel Alexander Brebner, A.M.D. (retired), on March 30th, in his seventy-third year. He received his first commission in 1863 and retired in 1888. He served with the Bhootan expedition of 1865, and was present at the recapture of Dewangiri (medal with clasp).

THE RED CRESCENT SOCIETY.

The Red Crescent Society has been in existence during a comparatively short period of time, but it has already done much excellent work. Eighteen months ago it had established numerous hospitals in Cyrenaica and Tripoli, and had expended at that time about £30,000. During the present war with the Balkan Allies it has doubled its activity, and its urgent appeals in all the parts of the Moslem world have received ready and liberal response, not only from the Ottomans in Turkey but also from the Islam worshippers of India, China, Egypt, Bosnia, and other places. The Convention of Geneva and the Conference of The Hague raised the society to an "Institution de Bienfaisance Internationale," whose regulations enjoin the rendering of assistance on the field of battle to wounded enemies of the non-Moslem as well as to those of the Moslem religion. The society is administered by a council of 30 members, who unite once a year in a congress. It has a president, two vice-presidents, a general secretary, an accountant and treasurer, all of whose offices are honorary, though the enormous pressure of work has necessitated the engagement of a number of employees who draw a monthly salary. The whole organisation is under the immediate control of the Ottoman Government. About two years ago Hussein Hilmi Pasha decided to create a number of hospitals with a chief medical resident, a surgeon, a physician with two attendants, a dispenser, a certain number of assistants recruited from the students of the medical faculty, ten experienced nurses, a secretary, a cook, and three servants to each. Every patient had to be supplied with a complete outfit of linen, and all requisites were, as much as possible, according to the demands of modern medical science. The following hospitals were established: 200 beds at Cadigra, Stambul, 600 beds at the University of Haidar Pasha, and 150 beds at the school of Vefa. In these hospitals alone thousands of sick and wounded, civil and military, have received most efficient treatment. Apart from the very laudable activity developed by the society in Constantinople, it took into consideration the needs of the provinces and especially of the two main armies of the East and West that were in operation on the Balkans, and for this work the society ordered from England four transportable hospitals with 100 beds each, and from Germany five complete collections of surgical instruments. After the renewal of hostilities the Red Crescent made every effort to meet all requirements. It established at the Dardanelles a lazaretto with 250 beds, and at Gallipoli one with 150. These lazarettos are almost exclusively for the severely wounded whose transport to the capital is impossible. A special hospital for both sexes with 150 beds has been established in Pera exclusively for the wounded arriving from the different places of the coast line of the Marmora Sea. A large hospital with 1000 beds, in which the Sultan takes a personal interest, has been established at the Military School of Pancaldi.

Correspondence.

"Audi alteram partem."

HEREDITY AND TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—It may perhaps seem unbecoming to criticise the work of one who cannot answer objections, the more so when that one has but recently passed away, but there are certain conclusions in the clinical lecture of the late Dr. Theodore Williams, published in THE LANCET of March 29th, which are open to grave doubt, and the matter is one of such general importance that there need be no question of propriety in referring to these conclusions.

Briefly my objection is that, in spite of an initial warning, the more important part of the lecture shows a tendency to return to the pernicious teaching of hereditary transmission of predisposition to tuberculosis. I say pernicious not only because the doctrine is so grave in import to the general public that we have no right to fall back on it except as the last theoretical resort, but also because its tendency is to minimise, though ever so slightly, the environmental factor which we may expect to understand even more thoroughly, and over which we may expect to obtain a constantly greater control. There is at the outset of the lecture a confusion between what is meant by hereditary predisposition and congenital or antenatal infection. Scudamore's case, quoted

by Dr. Williams, is an obvious example of the latter, a recognised though rare condition, and has nothing whatever to do with heredity. We see cases of congenital syphilis more often, but no one argues for a hereditary predisposition to syphilis.

While Dr. Williams's figures and generalisations as to the family relationship of consumptives may be accepted without question, they do not seem to support his conclusions (1) that both male and female phthisics transmit a tendency to the disease, and (2) that the male transmits a greater power of resistance than the female. Indeed, the transmission of a resistance against the disease, together with a tendency to it, seems somewhat of a paradox. The broad generalisation of the greater as well as the earlier influence of maternal tuberculosis has been reached by many authorities, but they have by no means drawn the same conclusions as Dr. Williams. For instance, Dörner, in an investigation on behalf of the Baden Ministry of the Interior (quoted in Köhler's "Results of Tuberculosis Research," 1911, p. 43), remarking on the same fact, concludes that it points to infective and not hereditary influence. He further finds that of children dying from tuberculosis in the first and second years of life 33·5 per cent. had a tuberculous mother, 14·7 per cent. a tuberculous father. There is no reason whatever in falling back upon vague hereditary transmissions of tendencies or specific weaknesses for an explanation of such facts.

Latham quotes Bang of Copenhagen as demonstrating that if the calves of tuberculous cows were removed at birth from their mothers it was possible to form a herd absolutely free from tuberculosis. Similarly, orphans through tuberculosis, when removed before too cumulative infection has occurred, prove as healthy as other children. We shall, I maintain, be absolutely at fault while we attribute to hereditary influences results which are clearly explicable by the cumulative effect of a tuberculous environment. The moral of which is that if we want to stamp out consumption we must begin at the beginning and remove children from infectious surroundings to some such institutions as orphanages.

I am, Sir, yours faithfully,

Norwich, March 31st, 1913. ARTHUR H. PRIESTLEY.

THE POSITION OF THE DISPENSER UNDER THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—The great transfer of dispensing to the chemist can only result in the throwing out of employment many persons who have spent their whole time as dispensers to doctors and institutions, many of whom have spent time in study, fees at colleges of pharmacy, and have secured the dispenser's diploma of the Apothecaries' Society. The most serious reflex has not yet been felt, their appointments tending to wane rather than to terminate abruptly. They represent a class of person who are in every way better fitted to do the dispensing for the insured persons rather than the assistant and junior of the trade who have done little dispensing in the past.

It is quite deplorable that the chemist is not requiring the institution or doctors dispenser to dispense under the Act. Analysis of advertisements (in a trade journal) made by myself shows more than three times as many situations open this year than last in the chemist trade. Only 4 per cent. of the advertisements referred to dispensers and 1 per cent. for the holders of the Apothecaries' Hall diploma. My position after nine years' service being seriously affected has actuated me to do all possible to seek a remedy with the help of my colleagues. Special efforts are being put forward to plead our case in the right direction, and much valuable help would be rendered by a general testimony of the medical profession. Postcards expressing sympathy in the movement from members of the medical profession would prove an asset and would be gratefully received. The names would only be used generally in the very legitimate effort to get the right to be employed to do work which has been taken from us so ruthlessly by the trade which does not wish to employ us for economic reasons since 32 per cent. of the situations are for juniors and 27 per cent. for unqualified assistants of the trade. "The qualified chemists wanted are chiefly for supervision purposes."

Allow me to thank the profession in anticipation of their favours, I am, Sir, yours faithfully,

GEORGE REED,
Dispenser.

The Provident Dispensary, 53, Surrey-street, Croydon, March 31st, 1913.

WHEN TO OPERATE IN APPENDICITIS.

To the Editor of THE LANCET.

SIR,—Sir George Beatson has very kindly sent me a copy of his paper on Appendicitis, so that I might obtain the information I desired in respect to the results of his 300 cases. On examining these figures I find 126 were quiescent cases on admission, and therefore do not count in the consideration of the mortality occurring in acute cases. Of the remaining 174, 10 had general peritonitis, of which 7 died; 164 were acute, of which 69 only had abscesses, and 4 died. The total mortality in acute cases, therefore, works out at 6·2 per cent., a low figure, it is true, but not so low a one as many surgeons who operate early can show, and not so low as obtained recently at St. Mary's Hospital.

In reading these figures one is struck by the rarity of cases of general peritonitis, 10 out of 174, a proportion which does not correspond with the frequent incidence in London, 19 out of 136 (St. Mary's) (15 cases in my last 57). Again, a mortality of 70 per cent. is exceptionally high. I think we should all feel very happy if our experience showed that 95 cases out of 174 would quiet down without suppuration. Certainly in my experience the proportion of suppuration in acute cases (admitted to hospital) is very much higher. Nor does Sir George Beatson mention the occurrence of multiple abscesses. He has no trouble with leaking or ruptured abscesses, and one is therefore compelled to infer that the resistant power of the Scotch peritoneum is much greater than that of the English.

Sir George Beatson acknowledges the benefit of early operation, but decides that it is not practicable. With this opinion I entirely disagree. At the present time, with competent modern surgeons in every district, telephones to summon them, and motors to bring them to a case, no patient *need* be left for more than 24 hours without being operated upon, except under very unusual conditions.

I am, Sir, yours faithfully,

W. H. CLAYTON-GREENE.

Devonshire-place, W., March 30th, 1913.

JOSEPH CLOVER.

To the Editor of THE LANCET.

SIR,—In your leading article on Joseph Clover in the last issue of THE LANCET you ask if he and Lister were at the first operation under an anæsthetic in Europe. I happen to know that Lister was, and in all probability Clover was also. He was in residence at the hospital in 1846, and so would naturally see anything remarkable that was going on. It may be of interest to recall that he was what is now termed the R.M.O., in those days the "resident apothecary," and my father was one of the last to be "apprenticed" to him—i.e., what now corresponds to taking out a complete or perpetual hospital attendance ticket. This was in 1847. I quite agree with your appreciation of Clover's genius. As a young man I knew him well, and almost the last anæsthetic administered by him was to a member of my family. A quiet, kindly man with a genius for useful mechanical invention and a power of thought that was remarkable. Some years after his death a late colleague of mine thought he would try and improve on Clover's small ether inhaler. He was able to study all Clover's models, and being an excellent mechanic himself, came to the conclusion that he could not improve on the original pattern. I only know one real improvement, that of the wide-bore through-tube of my friend Sir Frederic Hewitt. What an ideal anæsthetist Clover was—calm, cool and encouraging to the patient and a real help to the surgeon. In his time there were few who followed the profession of chloroformist, and the giving of anæsthetics was often a rather haphazard performance by untrained practitioners. As an expert it was no wonder

that Clover had the large practice which he deservedly enjoyed for a good many years.

I am, Sir, yours faithfully,

London, W., March 28th, 1913. F. WILLIAM COCK.

THE GENITAL FUNCTIONS OF THE DUCTLESS GLANDS IN THE FEMALE.

To the Editor of THE LANCET.

SIR,—Owing to an unfortunate concatenation of circumstances my first Arris and Gale lecture, which appeared in your issue of March 22nd, was published without being properly revised. For one thing, the lecture was published a week sooner than I expected, and as a result the corrected proof can only have reached you while THE LANCET was passing through the press—probably earlier than usual owing to the advent of Easter.

Apart from verbal and other small corrections, I regret to say that there are errors in some of the figures in Table I. These, of course, make the averages at the foot of Table I. (which should really be Table II.) inaccurate, although they do not affect the general results in any way. Further, it is obvious that the section dealing with the "Clinical Observations of the Effects Produced on the Thyroid by Ovarian Insufficiency in Women" should follow that on "Effects of Oöphorectomy on the Thyroid." As I believe no one can be too careful in the matter of accuracy either of style or scientific detail, I have felt it necessary to call attention myself to what has happened rather than leave it to someone else to do so. If anyone should be sufficiently interested in the subject and desire to have the correct figures I shall be glad to furnish him with one of the revised reprints which I hope will be available shortly.

I am, Sir, yours faithfully,

Liverpool, March 22nd, 1913. W. BLAIR BELL.

A REVISED NOMENCLATURE IN PHTHISIS.

To the Editor of THE LANCET.

SIR,—Amongst the remarks you make about my article on sanatorium benefit in East Essex you say "the term 'early case' has gradually become almost synonymous with a 'favourable case,' and this is to be regretted since an 'early case' may be an acute case and quite unsuited for treatment in a sanatorium, a hospital being the more suitable institution." With this everyone must agree. Do you not consider that the time has come when the whole nomenclature in phthisis pulmonalis ought to be put on a definite footing, and that a fixed classification ought to be used throughout the country?

Now that the State has undertaken the crusade against consumption all the statistics will be of enormous value, and unless these are comparable in every respect this will be of little real value. If a committee was formed of such men, say, as Sir R. Douglas Powell, Sir T. Clifford Allbutt, Sir William Osler, and Dr. Arthur Newsholme, of the Local Government Board, a scheme acceptable to the whole profession could be formulated. The nomenclature could be adopted in the medical schools, &c., and would prove, I think, of the greatest use to those interested in sanatorium benefit. I am, Sir, yours faithfully,

J. D. MACFIE,
Tuberculosis Officer to the Essex County Council.

Chelmsford, March 31st, 1913.

AUTO-VACCINATION IN TUBERCULOSIS BY THE X RAYS.

To the Editor of THE LANCET.

SIR,—While agreeing that for a man to have a grievance is abominable, it is with no view to self-advertisement that I desire to draw your attention to the plagiarisms of the original article on the above subject contributed by me to THE LANCET in January, 1907, garbled versions of which appear from time to time as abstracts from foreign journals in the medical press of this country, where the credit for this particular research is ascribed to foreign authors, who do not hesitate to use expressions that I have found it necessary to coin, without so much as citing the source of their information.[1]

I trust, therefore, that you will pardon my writing at length on this matter. Conspicuous amongst these is a Swiss practitioner in the *Correspondenz-Blatt* of Basel, who contributes an original article to that journal "On the Conservative Treatment of Tuberculous Glands."[2] In that article he uses the expression "auto-vaccination," which has been interpolated by the translator into "some kind of auto-inoculation."

My object in using that expression was to connote a physiological as distinguished from a pathological process, such as auto-inoculation so often is, and consequently fraught with danger. While the author cites one British author (Gulland) in the usual manner, he curiously cites Dr. Peter Paterson (whom I cited in my article) without giving the clue to Paterson's article by any footnote, spelling his name in the German or Norwegian fashion (Patersen) he omits reference to my article, the one with which he seems to have been mainly concerned.

It is not for me to exaggerate the importance of my research, which has not yet been repeated in this country, but I can assert from my experience that the operation for the removal of tonsils alone would thereby be reduced 80 per cent., with the greatest advantage to the sufferers, from the point of view of restoring immunity, when applied before the suppurative stage has set in. One dare not publish them on account of the *odium theologicum* that unfortunately exists. But a careful study of the results that have been obtained in Berlin, Paris, and Basel, to mention a few, goes strongly to support my contention. Quite apart from the mere results, these researches throw light upon the lymphoid and lymphatic mechanisms of the body in their bearing upon pathological processes of an undreamt of kind, such as will before long establish "the logan stone" of our science upon surer foundations.

I am, Sir, yours faithfully,

Harley-street, W., March 31st, 1913. H. D. MCCULLOCH.

A QUESTION IN LUNACY CERTIFICATION.

To the Editor of THE LANCET.

SIR,—Dr. Robert Jones, in remarking on the slackness of justices in the matter of lunacy certification in your last issue, might very well extend his valuable advice to the medical profession in general. It is astounding how ignorant are medical men on the mere bare facts of the Lunacy Acts. It is excusable, too, since it is only in private and public mental hospitals where the practice of the laws of lunacy can be thoroughly studied. And the pitfalls are many, even to those who are in the actual practice of lunacy, so it is not surprising to learn of the errors of the unprofessional and unpaid layman, the justice. In my opinion every medical man in general practice should hold a certificate in psychology or give proof of a sound training in this branch of his profession. The provision in the Lunacy Act, 1891, on the matter of the text of this letter, was undoubtedly a convenience to meet such cases where other justices than the judicial authority had signed the reception order. And the wording of the Lunacy Act, 1891, Section 24 (3), is simple enough, for it says:—

A reception order made after the passing of this Act shall not be invalid on the ground only that the J.P. who signed the order shall appear to have not been duly appointed under Section 10 of the principal Act, if the order is within 14 days after its date approved and signed by a judicial authority.

But surely it is the duty of the certifying physician to see that this is in order, for is there not a circular letter by the Commissioners in Lunacy, embodied in Archbold's "Lunacy," pointing out that all persons concerned with lunatics should make themselves acquainted fully and textually with the provisions of the Lunacy Acts? And as medical men are paid for signing lunacy certificates, and justices receive no remuneration, excepting the stipendiary, should not the former know their business, whatever may be the failings of the latter? I am, Sir, yours faithfully,

JOHN FREDK. BRISCOE.

Westbrooke House, Alton, March 31st, 1913.

[1] Brit. Med. Jour., Feb. 10th, 1912; Ibid., March 22nd, 1913; Ibid., March 29th, 1913.

[2] xlii. Jahrg. 1912, No. 20, Basel, 20 Juli, pp. 729–741.

BREAD AND THE SPREAD OF TUBERCULOSIS.

To the Editor of THE LANCET.

SIR,—In reply to Dr. A. H. Priestley's letter in THE LANCET of March 22nd, in which he says it would be interesting to know if any investigations into bread as a source of conveyance of tubercle bacilli have been carried out, and, if so, with what result, I would refer him to some experiments by M. Auché as to the destruction of tubercle bacilli in bread. The French experimenter mixed some tuberculous sputum with dough, which was then baked. Apparently the heat of the baking destroyed the bacilli, for guinea-pigs which were inoculated with a bouillon made with some of the bread-crumb were not infected with tubercle. M. Auché, however, did not consider that the experiment proved that bread made from tuberculous dough was necessarily safe, for in the case of large loaves the central parts may not always attain the temperature necessary for the destruction of the bacilli.

I am, Sir, yours faithfully,

London, March 26th, 1913. W.

*** The experiments were reported by our Paris correspondent.—ED. L.

THE NUMBER OF MEDICAL MEN IN EUROPE.

To the Editor of THE LANCET.

SIR,—With reference to the paragraph with this heading in the Budapest letter quoted from the *Orvosi Hetilap*, I think there must be some error in that paragraph stating that the number of medical men in the whole of Europe amounts to about 100,000. The following are some of the latest figures that I can obtain: Great Britain and Ireland, 32,600 (authority, the Medical Directory, 1913); France, 23,657 (20,809 medical men and 2848 dentists) (authority, your own Paris letter in THE LANCET of March 29th, 1913, taken from the official figures of the Direction of Assistance and Hygiene to the Ministry of the Interior); Germany, 32,449 (authority, Professor Schwalbe's German Medical Directory, as quoted in the Berlin letter in THE LANCET of Jan. 21st, 1911); Austria, 13,202 (authority, the Vienna letter in THE LANCET of March 18th, 1911, quoting official figures). These four countries alone total to 101,908. In addition, your correspondent gives 18,270 for Italy. He does not mention Russia, Holland, Spain, Portugal, Sweden and Norway, Denmark, and other countries. The *Kuracisto* has recently stated that there are 160,000 medical men in Europe.

I am, Sir, yours faithfully,

April 1st, 1913. STATISTICUS.

MOTORING NOTES.

(FROM A SPECIAL CORRESPONDENT.)

The Tax on Old Cars.

AT a recent meeting of representatives of the Royal Automobile Club, the Automobile Association, the Institution of Automobile Engineers, the Society of Motor Manufacturers, and the Commercial Users' Association it was decided to ask the Chancellor of the Exchequer to receive a deputation on this subject. Old cars have now to pay on the horse-power as estimated by the bore of their engines, though their actual horse-power is by no means equivalent to modern engines of like size. The deputation will also urge the desirability of quarterly licences. This latter item is of importance, as at present anyone buying a car in September has to pay a whole year's licence merely for four months. It is suggested that there should be a 50 per cent. reduction in the amount of the annual licence fee for cars built during or prior to 1908, as since then engine efficiency has greatly increased.

A Concession to the Medical Profession.

The authorities at Metz, in Germany, have recently given permission to medical men to carry a small Red Cross flag on their automobiles, and have ordered that cars so distinguished shall be given precedence in traffic.

An X Ray Motor Car.

In the *Journal of the Roentgen Society* for January Dr. E. B. Hazleton describes how a complete X ray apparatus may be carried in a compartment at the back of an ordinary motor car. The one mentioned does not weigh more than a passenger, and is sufficiently powerful to demonstrate the presence or otherwise of a stone in the kidney. The dynamo is run off the clutch shaft through a special countershaft connected to it by means of a chain, the gears, of course, being in neutral. Dr. Hazleton suggests that the wires from the secondary coil may be brought into the house through a window, or (which he considers better) the X ray coil and mercury interrupter may be taken into the room and the coil be connected by ordinary flexible light cables to the terminals of the dynamo. The current, of course, can also be used for lighting a room for operations or for electric treatment, such as light baths, electro-cautery, or vibratory massage. The fitting he describes can easily be adapted to any car, and the illustrations in his paper show well the method of construction.

Enclosed Front Seats.

Recently at the Guildhall court a private motorist was fined for driving a car with the driver's seat to a certain extent enclosed. The car was a two-seated one, fitted with a hood, wind screen, and side curtains, such as many medical men drive. The magistrate remarked that he considered the case a bad one and that the owner should have the hood cut right back. The law requires that the driver should have an uninterrupted view of the traffic on either side of him, and for the driver's own sake this is certainly desirable. In the case in question the side curtains were not fitted with windows. The fitting of celluloid windows in the side curtains would have complied with the regulations. It would thus be well for all ordering cars with cape hoods to see that the side curtains are fitted with windows.

A Useful Cleaning Brush.

Messrs. Brown Brothers, Limited, have recently introduced a new Duco cleaning brush which certainly seems well adapted for cleaning motor wheels. It has a curved end, which permits the user to remove the dirt between the spokes and the brake drum and from the inaccessible parts of the car under the frame which with the ordinary brushes cannot be got at, and are, therefore, usually left untouched.

The Duval Patent Spring Plates.

Springs are made of a certain number of laminations, the number depending on the weight of the car, and as a result of their position they are exposed to a great amount of wet, with the inevitable result that rusting may set in and ultimately prevent the natural sliding movements of the leaves, which, of course, defeats the very purpose for which the springs were originally designed. To obviate this, the springs should be taken off every six months or so, dismantled, and each member separately greased. As this is a troublesome operation it is generally not done. To solve this trouble, the Southern Automobiles, Limited, of Blackheath, have introduced the Duval plates. These plates are made of non-corrodible bronze, perforated to receive a specially prepared solidified lubricant, and they are inserted between the steel plates of the springs. The result is a non-rusting flexible spring, maintaining its resiliency and ensuring comfortable travelling. The cost of fitting is about 14*s.* per spring.

The New "G.R." Doctor's Coupé.

Original features are not lacking in this car, which I recently tried on the road. This small coupé, in my opinion, is essentially of the type that most medical men really need, whether for long-distance country work or for town visiting, and is equally comfortable whether used open or closed. I found after severe testing that it would go practically anywhere where there is a road, and was also quite comfortable, vibration, even on the roughest track, being reduced to a minimum. It proved to be economical in petrol, and should be the same with regard to tyres. Those desiring high fuel economy must be satisfied with small cylinders, and, providing the driver does not mind using at times his gearbox, small engines such as that in the doctor's "G.R." coupé are as efficient as and much cheaper than larger ones. If there can be any indication from the stroke and bore ratio, there should be peculiar advantages arising from the combination of 65 mm. bore and 110 mm. stroke. The engine, which has four cylinders cast *en bloc* of these dimensions, undoubtedly develops in ordinary use greater power than would be expected from an engine of this cubic capacity, and for a coupé the body in this car is exceptionally roomy, there being ample space for three in the interior.

In fact, the car was taken for a hundred miles' run with that number. The valves are all placed on one side of the engine, and are interchangeable. The distribution gear is driven by skew gearing, the magneto is set across the front, and the oil pump is driven at the bottom end of the magneto shaft. Some makers have spoken of inaccessibility as a virtue, suggesting that the inconvenience in itself prevents the mechanism of their cars being tampered with. The Unic Company, who make this car, I am glad to note, do not think in this way: everything is get-at-able. A single screw and the magneto is disconnected; by turning a thumb-screw the plate covering the adjustable valve lifters comes away, and by undoing a casing the carburetter jets can be taken out. But it is not likely that the jets will need attention, as the filter on top of the float chamber practically prevents any dirt from entering the carburetter, and in addition there is a gauze strainer in the float chamber. Lubrication is by pump through a hollow crank shaft to the bearings of that member and connecting rod, whilst an indicator on the dashboard shows that the oil is circulating. The clutch is of the leather-faced cone type, and fierceness is avoided by laminated springs fitted below the leather on the male portion. The withdrawal mechanism is well designed, and a clutch stop automatically slows down the top shaft in the gearbox, so that the speeds can be changed without sound or jar. Four forward speeds and a reverse are provided, controlled by a lever working in a gate, a stop on the reverse obviating getting into this gear by mistake. The brakes are of the internal expanding variety, the side ones operating on drums fixed to the back wheels, and the foot brake on the transmission at the back of the gearbox. Both are most efficient, and can be easily adjusted, but I must say I should prefer a pedal-applied brake acting directly on the rear wheels, and a side lever brake on the transmission. This method relieves the transmission mechanism and universal joints of work which, with the usual pedal brake, most drivers call upon them to bear. For cooling purposes thermo-syphonic circulation is relied upon, and on the test was found most satisfactory, the engine being quite cool after a severe hill climb. The steering is very easy, and the control pedals are conveniently placed. Personally I like the accelerator pedal to the right of the brake pedal instead of between it and the clutch pedal, but a driver would soon get used to the latter position.

As a result of an afternoon spent in driving the car I consider it sufficiently fast, lively, and very comfortable. As a thoroughly and conscientiously contrived piece of work it is well worth the consideration of a practitioner in search of a car of this character. The price with a coupé body complete is £330, and the agents are Messrs. Mann and Overton, Limited, of 10, Lower Grosvenor-place, London, S.W.

MEDICAL PRACTICE UNDER THE INSURANCE ACT.

(BY OUR SPECIAL COMMISSIONER.)

(Continued from p. 922.)

V.—THE WORKING OF THE ACT AT CARLISLE.

The County of Cumberland and the City of Carlisle.

EXCEPTING the city of Carlisle, all the medical profession in Cumberland, as far as I can gather, condemned the Insurance Bill during its passage into law. From the first, indeed, doubts were entertained in Carlisle as to whether the cloud had not a silver lining. As far back as October last five practitioners in Carlisle expressed their willingness to go on the panel and their approval of the Act. These practitioners were very severely criticised by their colleagues. The practitioners of Cumberland held out well in defence of what they considered to be threats at their professional position; none went on the panel before Jan. 1st. But the leading of the British Medical Association then failed to retain the confidence of many, and the feeling of apprehension spread. The city of Carlisle has a population of 48,000, and forms a district under the Act. But a Greater Carlisle will be incorporated in the course of a few months, and the enlarged city will possess a population of about 60,000. In the meanwhile there is a local panel formed out of the 40 or so practitioners in the city, on which there are 13 practitioners. But it seems not unlikely that these practitioners would act on different tacks if some energetic steps had to be taken. Some are far more friendly to the Act than others, and some are not popular among their colleagues. As far as I could gather, out of 13 men on the panel nine are in favour of the Act. In the county of Cumberland 120 practitioners are on the different panels out of about 160 practitioners, a larger proportion much than we find in the city, yet the county is not so much in favour of the Act as the city is. Again, the two medical representatives upon the Carlisle Insurance Committee, elected by the whole profession of the city, naturally represent the views of the majority, and so the nine medical men in favour of the Act have no elected representative upon the Committee.

A Favourable View of the Act in Carlisle.

In my previous inquiries, hitherto in the South of England, I had for the most part heard the Act abused from various points of view. Now I was to have an opportunity of meeting some of its partisans. I interviewed one of the nine practitioners on the panel, who said at once that he was pleased with the working of the Act so far. He was receiving better pay and keeping more regular hours. He had no longer the trouble of dispensing, and he was overjoyed at being liberated from the thraldom of a lay committee composed, for the most part, of ignorant working men. Under the rules of his previous club practice the club members used to pay him 3*s.*—recently raised from 2*s.* 9*d.*—per year per member. Formerly in Carlisle, he said (and I know it to be the case), there were clubs that did not pay their medical officer more than 2*s.* a year per member for medical insurance. To-day under the Act the club doctor receives, instead of 3*s.* or 2*s.*, 7*s.* How was it possible, he asked, to doubt that this was an improvement? Then, again, in the case of complaints, the Medical Service Subcommittee established by the Act should give a better trial and a more impartial verdict than the committee of some club or Friendly Society. "Further," urged my informant, "once on the panel always on the panel, while under the old club system the medical officers of clubs and medical aid societies could be dismissed at any moment at the caprice of a lay committee." Considering the difficulty of earning enough to live upon when contract work only brought in from 2*s.* to 3*s.* per head per annum, I inquired how many persons he thought a practitioner should have on his list. The answer was that the practitioner should not have more than from 1500 to 2000 on his list, and that this would leave room for private practice. This figure, I understand, is one that has been generally adopted as reasonable, though the margin of time for any private practice must be slender. My next inquiry was about the attitude of patients towards himself. He said that he found panel patients more civil than the old club patients had been. The latter would seem to be saying: "I pay my club fee and you are my servant." The Act, on the contrary, imposes regulations on the insured patients. They cannot order their medical attendant about; they will hesitate to threaten to complain against him and have him dismissed, as they know that such threats are idle. I pointed out that the Act was likely to cause many private patients to become insured persons, and that this might be a serious loss to many practitioners. My informant admitted that this was undoubtedly so. He himself, he said, had lost about 30 per cent. of his private patients who were now insured persons, while he admitted that some other practitioners in Carlisle had lost at least 50, and perhaps even 70, per cent. of their private patients. He summed up this situation, however, by saying that formerly not only private patients failed to pay, but even clubs and medical aid societies occasionally came to grief. Under the National Insurance Act he expected to make no bad debts.

Panel Practice and Scientific Progress.

Calling on another practitioner, who from the first had pleaded in favour of the Act, he told me rather ruefully that it kept him terribly busy. The Act was undoubtedly a great improvement on the old order of things. It was quite evident, he thought, that it would do a great deal of good, but his premises were now so crowded that he very much feared he would be compelled to get a new house. Beneath the complaint of this practitioner I thought that I detected a certain satisfaction with the condition of things. The next practitioner on whom I called had his house full of patients. They were being accommodated practically all

over the house, and it was a matter of some difficulty to find a chair on which to wait for a favourable moment to speak to this overworked panel doctor. When I met him he gave me his views at once. He had more work to do now the Act was in force, and "such a number of trivial ailments." He had not more visits to pay, but so many insured persons came to see him at his surgery. When he told them there was nothing the matter they replied that they were very glad to hear it. They did not really think they were ill, but as they had been paying insurance money they thought they might as well come and make sure. In that manner they would get some return for their outlay. Then there was the signing of the certificates that entitled insured persons to claim sick allowance and the various benefits. These certificate forms were not uniform, but differed with the different approved societies. Each society would insist on complicating matters by having its own form. There was not one certificate to say that a man was fit to return to work and another to say that he was not fit to work. If so much time was taken up in attending to things that had nothing to do with medicine it would be more difficult than ever for the practitioner to read and follow the developments and progress of science. With a private practice no panel doctor should have more than 2000 names on his list, said this gentleman, and they must all be living within two miles or so. The Act would do great good, he thought, to many poor people, but it would hinder the scientific progress of medicine. The panel practice would fall, he feared, to the level of the old club practice; the practitioner would get wearied out by trivial cases. The best hope for medical science lay in the fact that some insured persons were not availing themselves of their red cards, but remained private and paying patients. Here, then, was a partisan of the Act who was prospering as a panel doctor, but who nevertheless saw that there were dangers, and that medical men who devoted themselves solely to contract work were not likely to render much service to science, so deadening would be the routine, and perhaps so arduous the work.

An Income Doubled under the Act.

My next interview was with one of the most successful of the panel doctors, at least so I judged him to be. He was hardly able to realise his own good fortune. When once he understood the purport of my visit he conducted me to the window and begged me to look at a powerful motor-car standing outside his door. He had scarce worked under the Act for two months, and already he could buy a motor regardless of expense. He had been making about £600 a year in private practice: now he had some 2500 insured persons on his list, bringing him in about £900. It was true that his private practice had decreased by one-third; two-thirds remained, and the third who had become insured patients was not all loss, as they had come to him as their panel doctor. The Act, said this practitioner, was a splendid measure so long as the principle of the free choice of doctor was strictly maintained. Formerly contract work was parcelled out by the clubs. The medical practitioners had to pay court to committees of management, the patients had little or no voice in the matter. Now any practitioner who really wanted to work had a fair chance. He had only to make himself popular. It was true they were having a lot of trouble in getting the service started. Newly insured persons came with trivial ailments for the novelty of the thing, but that would all wear out, and if surgery attendance had much increased, visiting patients at their own homes had not, and that was a most important side of the question. A rumour had been circulated that if insured persons did not get their red tickets at once they would not be able to obtain medical attendance. Consequently, some 300 persons came to him on one single evening, blocking up the street. The popular doctor signed the red cards in batches of 50, telling the owners to come back on another occasion to give the details. This continued for several nights, but a great many who obtained his signature on their cards never gave themselves the trouble to return, so that he really does not know even the names of all those who may call upon his services. "But this does not matter," he added; "I do not need a formal introduction, for, thank goodness, I have no patients who stand upon unnecessary ceremony. They are going to be much more reasonable to manage than private patients were. Three or four people can be seen in the time one private patient would take up. Then they take your word and readily submit to be examined; there is no bother, no lengthy explanation is needed; we can treat the disease and not the people."

Malingering.

There was a phase of the work, however, which this cheerful informant viewed with apprehension, and that was malingering. There were so many men who, having passed mid-life, did not want to work, so they "had pains in the back." These are the cases that make it possible that the panel doctor who most readily grants certificates of sickness will acquire an unfair advantage—that is to say, that a certain class of patient will desire not to be treated by a medical man who looks very closely after malingering. The difficulty may have to be met by the appointment of medical referees. An insured person would not be allowed to change his medical attendant if he had been sent to a referee for malingering and the charge had been made good. In regard to the wage-limit, he did not think he had more than two patients whose incomes exceeded £102 a year, and who had come since January to be treated as insured persons. There were so few above this proposed wage-limit that he did not think they were worth bothering about. Finally, he freely recognised he had been much abused by his fellow practitioners—they had even called him a scoundrel; but for all that he was very grateful to Mr. Lloyd George and the Insurance Act. The Act had been denounced as Socialism, but it was not a question of Socialism or anti-Socialism, for those were political matters. What they had to think about was the sick, especially the sick poor. Would the medical profession be able to give more attention to the latter than they had done previous to the passing of the Act? He maintained that the poor would get a great deal more attention than formerly, and to call this Socialism would not make it any the less beneficent.

The Working Class and the Act.

I went also among the poor themselves to see how they responded to such sentiments. It must be confessed that I did not find the Act was popular among many of the working class of Carlisle. They complained that the work of administration is much more complicated than it was with their old clubs and Friendly Societies. Perhaps it was only just to pay the administrators better, but this did not make for economy. There was a great amount of unnecessary red-tapeism, and the insured and those who were managing affairs were smothered with literature. What was wanted was simplicity and more effective management. When the workmen organised and managed methods of insurance among themselves they did the work without so much bother and so many complications. One thing, however, the Act has done for the working classes in the Carlisle district. It has greatly strengthened the Gas Workers and General Labourers' Union. The Northern District Branch of this far-reaching union of workers had attempted to start a benefit fund of their own, but were not very successful. To-day, the benefit fund of this trade union has obtained recognition under the Act as an Approved Society. Having thus become a State institution, any number of workers who hesitated to join have now come in, and this the working classes consider a great advantage. But so far as the medical aspect of the case is concerned they are less appreciative. They all instinctively see the advantage of the free choice of doctors, but they do not fully appreciate the harm that club practice did. Again, they are feeling somewhat resentful against the general hospital, where treatment and admission are not so readily granted. Patients are now frequently referred back to the panel doctors. The workmen, who claim that they have subscribed liberally to the upkeep of the hospital, now threaten to withdraw their support, a difficulty which has always been foreseen. For this, it must be remembered, is not a new trouble, but the working of the Act has necessarily accentuated it, as the hospitals all over the country have been compelled alike to sift the cases in the out-patient departments, and to withstand the pressure upon their beds. The finances of the Carlisle General Hospital, like those of many analogous institutions, are not at all flourishing. Some fear that it may be necessary to municipalise the hospital. In that case the medical staff would have the right to insist on being paid, and the cost would be greatly augmented. The ratepayers therefore view this prospect

with considerable apprehension. All over the country the workmen's contributions have been magnified in importance, and the charitable spirit that should influence such subscriptions has been obscured. Carlisle is experiencing this difficulty.

Of course, as the figures given above show, the majority of the medical practitioners in Carlisle do not approve of the Insurance Act. But so far I have heard so much against the Act that I think it right to repeat what those who are in favour of the measure had to say. This accounts for my somewhat one-sided relation of what I heard and saw at Carlisle.

(To be continued.)

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Institutions and Insured Resident Officers.

AN important letter has been received from the National Health Insurance Commissioners regarding a "problem" which was discussed by the Salford board of guardians lately in reference to the treatment of resident officers who became non-resident during sickness. The general purposes committee of the board, with one dissentient, resolved to recommend that resident officers who remained within the institution be paid their full salary and required to refund the amount equivalent to the full amount of sick pay received from their Approved Society. In the case of officers preferring to leave the institution for treatment during sickness, it was recommended that they be paid their full salary and required to refund a sum equivalent to one-third the amount of the sick pay received under the Insurance Act. In reply to a letter from the dissentient guardian, the Commissioners state that the payment of wages during sickness, except under the provisions of Section 47 of the Insurance Act, is a question of private contract between the employer and employee, and is not affected by the operation of the Act. The fact that an employer pays contributions under the Act does not relieve him of any liability in respect of such contract, and no refund could legally be demanded on account of any benefit which the insured person had received.

An Analysis of Children's Diseases at Three Stages.

Mr. E. D. Simon, in an interesting address delivered in Manchester on what he called "Religion and Civics," differentiated three stages at which we have information as to the health of the child. These three stages, he said, were (1) the report of the medical officer of health on infant mortality; (2) that of the medical officer of the education committee as a result of inspecting children at the age of five when entering school; and (3) the result of inspection when they left school. In 1911, out of every 1000 children born in Manchester 156 died within the first 12 months. In middle-class families, where children had proper treatment, deaths within the first year were comparatively rare. As to illegitimate children, the death-rate in one district was more than 500 per 1000 of the illegitimate children born. A high death-rate meant a high damage rate, for one in every four inspected at the age of five proved to be suffering from comparatively serious ailments of the skin, eyes, ears, or breathing passages. It was found that 17,000 out of the 100,000 school children had "thoroughly bad" teeth. Infant mortality was largely due to the fact that the slum mother did not know how to give her child even those advantages open to her. For the majority of children the private dentist did not exist. The report of the Dental Hospital showed that of the 17,000 school children with thoroughly bad teeth only 100 were treated at that hospital. If a child had ringworm the mother had to lose half a day in visiting and waiting at a hospital. Money was spent in finding out what was the matter, but no attempt was made to put things right. Hence the speaker urged the establishment of school clinics.

April 1st.

DONATIONS AND BEQUESTS.—Contingent on the death or remarriage of his wife, the late Mr. Richard Stanway has left £1000 to the Eden Cottage Hospital, Broad Oak, Essex.—Sir John Ramsden has contributed £1000 to the fund for the extension of the London School of Tropical Medicine.

WALES.

(FROM OUR OWN CORRESPONDENT.)

The Health of Workers in Pitch.

THE manufacture of patent fuel from pitch and coal dust is an increasing industry in South Wales, and especially in the neighbourhood of Swansea. The men who are employed in certain processes have been found to suffer from warty growths which in some instances have taken on an epitheliomatous character, and in certain instances the eyes of the workers have been affected. Reports which had been received led the Home Office to consider the desirability of scheduling the industry as a dangerous trade, and in the summer of 1911 a long inquiry was held in Swansea and Cardiff with a view to ascertaining the extent of the mischief done. No definite decision was arrived at as the result of the inquiry, as it was considered desirable to ascertain what would be the effect of carrying on some of the processes under cover and of providing bathing facilities for the men on the works premises. Several owners of works undertook to make the necessary structural alterations and a few of the men volunteered to make use of the bathing facilities. At a further inquiry recently held at Swansea and Cardiff the results which had followed these experimental safeguards were disclosed. The carrying on of the work under cover seems to have been successful, for the manager of one works where a large shed had been erected stated that since its erection there had been no case of the disease among the men employed there. The encasing of machinery and the more regular sweeping of the workplaces with a view to lessening the amount of dust scattered about appears to have had a good effect, but the bathing at the works has met with a great deal of opposition from some of the men, although in this connexion there was a difference of opinion among the men employed in Swansea and in Cardiff. The men's representative in Swansea said that the provision of baths had been greatly appreciated, and he considered they had had a beneficial effect, for the men who regularly bathed had become free from warts and their skin generally had improved. The Cardiff workmen, on the other hand, were opposed to the bathing at the end of the day's work, for they contended that it produced an acute burning sensation, especially on sunny days or when there was a cold wind. Some of the men declared that they would give up the work if compelled to have baths at the works. This difference may possibly be due to a different form of pitch being used in the two districts. It transpired during the inquiry that Mr. H. Campbell Ross was conducting some investigations into the relative action of different forms of pitch, and had already found that pitch made from Scotch coal was less deleterious than that made from the South Wales coal, and that there was a difference between blast-furnace pitch and gasworks pitch. It is probable that the results of his further investigations will be awaited before any decision is come to by the Home Office as to regulating the industry.

Sanatoriums for Wales.

An important part of the scheme of the Welsh National Memorial Association is the erection of sanatoriums in different parts of Wales. The association has already taken over the only two at present in use—the West Wales Sanatorium at Alltymynydd, near Carmarthen, which was opened in the summer of 1909, and a small institution in the Isle of Anglesey which it is now proposed to enlarge. A new institution is to be erected at once at Bangor for North Carnarvonshire, and another for South Carnarvonshire and Merionethshire near Barmouth. For Cardiff there are now in course of erection buildings at Glan Ely, and it is anticipated that in a few weeks they will be sufficiently advanced to allow of the admission of about 50 patients.

Isolation Hospitals in Glamorgan.

A noticeable feature in the recently issued report by the medical officer of the Local Government Board on the incidence in England and Wales of notifiable infectious disease during 1912 is the large number of cases of scarlet fever which occurred in Glamorgan. In the whole of Wales the rate per 1000 inhabitants was 3·35. In Aberdare it was 12·5 per 1000, in the Rhondda Valleys 6 per 1000, and in Ogmore and Caerphilly 7 per 1000. In recent

years there has been an increasing inclination on the part of sanitary authorities to provide hospital accommodation for the isolation of infectious diseases, though there are still many districts almost entirely unprovided for in this respect. In the Gelligaer urban district near Merthyr, where there is a population of nearly 40,000, a new hospital costing £12,000 has just been opened, and as there were 110 cases of scarlet fever in the district last year it would seem to have been established none too soon. Aberdare is very ill-provided with means of isolating cases of infectious disease, a small wooden building being the only available institution, although last year no fewer than 635 cases of scarlet fever were notified to the medical officer of health. A few years ago plans were prepared for a much larger hospital of a permanent type, but no further steps were taken with regard to it owing to the difficulty of securing a suitable site. The efforts of the district council in this direction have now, however, been successful, and a site has been obtained at a cost of £8750.

April 1st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

County of Aberdeen and Sanatorium Treatment.

AT a conference between the public health subcommittee of the Aberdeen county council and representatives of the public health authorities of the county from the several burghs and district committees, held recently in Aberdeen, it was decided that sanatorium treatment should be undertaken for all persons requiring such treatment, including insured persons and their dependents, also uninsured persons. It was also decided to appoint a tuberculosis officer for the whole county. Representatives were present from Peterhead, Fraserburgh, Rosehearty, Ellon, Old Meldrum, Kintore, Inverurie, Ballater, Turriff, and Huntly, and from the district committees of Deer, Ellon, Garioch, Turriff, Aberdeen, Alford, and Huntly. With regard to the sanatorium question, only the four representatives from Turriff voted for an amendment to the effect that the negotiations be delayed in the meantime.

Lanarkshire Scheme for a Sanatorium.

A joint scheme for providing a dispensary service and sanatorium for the prevention and treatment of tuberculosis under the National Insurance Act has been considered by representatives of the burghs of Airdrie, Coatbridge, Hamilton, Motherwell, Rutherglen, and Wishaw, and various recommendations have been made. These include that a tuberculosis officer be appointed, at a salary of £500, to advise and assist the local authorities in arranging the details of the joint scheme, and to act as superintendent of the sanatorium when erected. It is suggested that such an officer should attend at least once a week at the hospital or dispensary in each burgh and in emergency cases when required. That otherwise the medical officer of health should carry out the work in each burgh, and be responsible to the local authority for the local organisation and the treatment of patients in the hospital. A subcommittee to whom the matter was referred agreed that provision should be made for 100 beds, and considered that a site of from 15 to 20 acres would be necessary, with the right to lease ground adjoining for the purpose of providing work.

Aberdeen Maternity Hospital.

At the first annual meeting of the Aberdeen Maternity Hospital the report for the year was presented. It states that the directors and representatives of the Approved Societies have been conferring, and it was hoped that an early and satisfactory arrangement might be come to, so that those obtaining benefit under the National Insurance Act might have attention either from the outdoor or indoor staff of the Maternity Hospital in return for adequate remuneration under the provisions of the Act. The directors are of opinion that meantime a charge of 10*s.* should be made for each case treated in the hospital, and 7*s.* 6*d.* for each case treated in the district; special cases to be specially arranged for with the societies. This arrangement may involve the appointment of a certificated nurse to attend specially to the outdoor cases. No progress could be reported with regard to obtaining some substantial assistance from the University, whose students benefit so largely from the teaching and practical training furnished by the hospital. They were hopeful, however, that some help might be forthcoming. 221 cases were treated during the year, an increase of 16 on the previous year, and 232 cases in their own homes, an increase of 5. All the outdoor cases were attended by the nurses of the hospital in addition to their indoor work. Forty-three students had attended the practice of the hospital, indoor and outdoor. From May 31st to Dec. 31st the expenditure exceeded the income by £143 2*s.* 3*d.*, and the expenditure from Jan. 1st to May 31st prior to the disjunction from the Aberdeen Dispensary exceeded the total deficiency on the ordinary working by £263, the total deficiency of the year being £407.

New Prison Commissioner.

The King has been pleased on the recommendation of the Secretary for Scotland to approve the appointment of Mr. James Devon, surgeon to His Majesty's prison in Glasgow, to be a Prison Commissioner for Scotland in place of Mr. Trotter Robertson, deceased. Mr. Devon is a native of Glasgow, having been born in the Calton in 1866. His early days were occupied with various activities, among his occupations being service in a house-factor's office and in a Bridgeton factory. He devoted his leisure to studying medicine, and in 1893 he became a qualified medical man. He was a house surgeon in the Royal Infirmary, Glasgow, and later assistant in the pathological department there. His first outside appointment was as assistant medical officer in the city poorhouse, and in 1895 he was appointed medical officer in Duke-street prison. In 1901 he became one of the three medico-legal examiners to the Crown in the Glasgow district. His promotion to the high office of Prison Commissioner will be very popular and is felt to be highly deserved. Mr. Devon has earned wide distinction as an authority on criminology, and has lectured extensively on the subject to the Royal Philosophical Society of Glasgow and other bodies. His book, "The Criminal and the Community," published in 1910, is a valuable work on prison management and criminology.

Glasgow Hospital Sunday Fund.

At the nineteenth meeting of contributors to this fund it was reported that the income of the fund for the year amounted to £4623, a decrease of £136 as compared with the preceding year. The sum set aside for allocation was £4410, and, as in previous years, a division was made in proportion to the number of fully occupied beds in each infirmary. The Royal Infirmary, with 638·2 beds, got £1946 15*s.* 7*d.*; the Western Infirmary, with 553·5 beds, got £1688 8*s.* 2*d.*; and the Victoria Infirmary, with 254 beds, got £774 16*s.* 3*d.*

Aberdeen Dispensary.

The annual meeting of the subscribers to the Aberdeen Dispensary and Vaccine Institution was held recently. During the year 9310 cases, as compared with 13,129 the previous year, have been treated, the decrease being probably in some measure due to the charge of 2*d.* now being made for medicines, and also partly to the fact that in 1911 there was an epidemic of measles. The number of patients treated in their own homes during the year by the general staff of the dispensary was 2355, compared with 3053 the previous year. The number of visits paid was 5951, compared with 7914 in 1911. Seventy vaccinations and revaccinations were done, a decrease of 7. 327 dental operations were performed, compared with 427 in 1911. Special ear, nose, and throat cases numbered 900, being a decrease of 123. 31,002 prescriptions, as compared with 47,292, were dispensed. The charge of 2*d.* now exacted for each time medicine is dispensed brought in £184 11*s.* 4*d.*, going a considerable way to meet the cost of medicine, which was £286 8*s.* 9*d.*, £46 1*s.* 3*d.* less than in 1911, thus showing a considerable decrease all round. To the post of medical officer, rendered vacant by the retirement of Dr. W. F. Croll, Dr. Middleton Connon, late of Montrose, was appointed.

April 1st.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

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micrococcus taken from the pearl capsules of certain shell-fish found on the sea-shore at Hyères. M. Dubois announced that he intended to resume his experiments.

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M. Marc Langlais has undertaken to make a study of the number of microbes to be found in shaving brushes, combs, hair brushes, and other implements of the barber. Many barbers becoming interested in the question and wishful to learn a simple method of rendering their apparatus aseptic, applied for information to the Institut Pasteur. The reply was reassuring. It appears that the microbes found by M. Langlais are for the most part innocuous. Simple methods of disinfection consist in a slight flaming of metal combs and razors. Shaving brushes should be soaked in an antiseptic solution. A formol heating steriliser similar to those used by surgeons for their instruments is recommended.

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It has been decided by the city of Lyons to organise a town life exhibition there from May 1st to Nov. 1st, 1914. In this international exhibition the vast subject of collective life in the modern town will be demonstrated. The exhibition will deal with the requirements of hygiene, of transport, the culture of man, puericulture, school, instruction, work, disease, tuberculosis, alcoholism, old age, invalidity, and industry. The following is a list of the sections: statistics and demography; street control and modes of transport; drinking-water; surface-waters and the purification of water; evacuation of the solid residues; dwellings; furnishings; lighting and electric lighting; ventilation, heating, and refrigerating; foods of animal origin; milk and its derivatives; foods of vegetable origin; hygienic drinks; adulteration and inspection of food-stuffs; mineral waters; special chemical hygienic products; infant protection and puericulture; school; military hygiene; bodily hygiene and cleanliness; primary and secondary instruction; superior instruction; technical and professional instruction; the hygiene and protection of work; social economics; police of towns and police laboratories; infectious diseases; disinfection; organisation of public health in various countries; the departmental health services; assistance and the hospitals; the struggle against tuberculosis; the struggle against alcohol; touring; physical culture and sports; the arts; photography; books, posters, and newspapers; horticulture; electricity (other than lighting); the postal, telegraph, and telephone services. All exhibits relating to social or economic science will be admitted free, commercial exhibits alone being subject to duties.

March 31st.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Unusual Combination of Clerical and Medical Functions.

THE ecclesiastical and medical authorities of the Province of Saxony have recently had to deal with an unusual problem in medical ethics. A medical man in a small country town complained to the medical chamber of the province that the clergyman of a neighbouring locality, who had been a qualified medical man before he entered the ecclesiastical profession, was now undertaking medical practice and recovering fees, which were spent by him for benevolent purposes. Before this clergyman was appointed to his present parish there had been no medical man resident in it, and patients had consulted the complainant, who lived not far away. The complainant had, however, lost nearly all this portion of his practice, and things became worse when the clergyman was appointed honorary medical officer of the locality together with the medical man of the town. The medical chamber accordingly transmitted the complaint to the ecclesiastical authority of the province with a request that the clergyman should be prohibited from accepting the appointment and also from acting as a medical practitioner. The consistory, however, took a view of the case different from that of the medical chamber, saying that as the clergyman in question had a regular German medical qualification he was of course entitled to engage in medical practice. They could only prohibit him from doing so if he neglected his clerical duties, a fault which he had not committed. The consistory further stated that the only patients whom he attended were residents in his parish, and that at their special request he had been appointed honorary medical officer of the parish, in which there was no resident medical man. He did not receive any fees for this appointment, so that the neighbouring medical man who continued to act as medical officer and to receive the same salary as formerly had no real ground of complaint. Far from prohibiting the clergyman from engaging in medical practice, the consistory wished him to continue his work in the interest of the parish. The medical chamber thereupon decided to enter the clergyman in the Medical Register in the same manner as all other medical men residing in the province, to recover the tax for the medical chamber from him, and to bring him under their jurisdiction in questions of medical ethics.

The Retirement of Professor Heubner.

Professor Heubner, the well-known specialist for diseases of children, has left his post as ordinary professor of pædiatrics at the University of Berlin and director of the pædiatric department of the Charité Hospital. At the occasion of his final lecture all his former and present assistants assembled in the lecture-room together with the students. Professor Finkelstein presented a "festschrift" edited by the different assistants, and announced that a fund had been collected under the name of the Professor Heubner Fund for the support of clinical and therapeutical researches in pædiatrics. A premium from the interest of the fund is to be distributed every three years to workers in the above branch of medicine.

Statistics of Deaf-mutism.

According to the statistical journal edited by the Prussian Statistical Office the number of deaf-mutes in Prussia registered at the last Census was 34,804, of whom 18,659 were men and 16,145 were women. It is remarkable that the relative number of deaf-mutes has continuously decreased since 1871; in 1871 there were 9·9 deaf-mutes registered for each 10,000 of the population, but only 8·7 in 1910. The Eastern Provinces of Prussia have relatively the greatest number of deaf-mutes, the ratio per 10,000 being 17, 16, 15, and 11 cases in East Prussia, West Prussia, Posen, and Pomerania respectively. In the Western Provinces, Rhenish Prussia, Saxony, Westphalia, Schleswig-Holstein, and in the district of Berlin only 5 to 7 cases occurred for each 10,000. The Jews have the largest proportion of deaf-mutes—namely, 14·4 per 10,000; among the Protestants the corresponding number is 9·9, whilst among the Roman Catholics it is 10·3. In the year 1910, of the men 27·5 per cent. were married as compared with 13 per cent. in 1880. The increase of marriages is certainly caused by the fact that a better training of the men

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(FROM OUR OWN CORRESPONDENT.)

Unusual Combination of Clerical and Medical Functions.

THE ecclesiastical and medical authorities of the Province of Saxony have recently had to deal with an unusual problem in medical ethics. A medical man in a small country town complained to the medical chamber of the province that the clergyman of a neighbouring locality, who had been a qualified medical man before he entered the ecclesiastical profession, was now undertaking medical practice and recovering fees, which were spent by him for benevolent purposes. Before this clergyman was appointed to his present parish there had been no medical man resident in it, and patients had consulted the complainant, who lived not far away. The complainant had, however, lost nearly all this portion of his practice, and things became worse when the clergyman was appointed honorary medical officer of the locality together with the medical man of the town. The medical chamber accordingly transmitted the complaint to the ecclesiastical authority of the province with a request that the clergyman should be prohibited from accepting the appointment and also from acting as a medical practitioner. The consistory, however, took a view of the case different from that of the medical chamber, saying that as the clergyman in question had a regular German medical qualification he was of course entitled to engage in medical practice. They could only prohibit him from doing so if he neglected his clerical duties, a fault which he had not committed. The consistory further stated that the only patients whom he attended were residents in his parish, and that at their special request he had been appointed honorary medical officer of the parish, in which there was no resident medical man. He did not receive any fees for this appointment, so that the neighbouring medical man who continued to act as medical officer and to receive the same salary as formerly had no real ground of complaint. Far from prohibiting the clergyman from engaging in medical practice, the consistory wished him to continue his work in the interest of the parish. The medical chamber thereupon decided to enter the clergyman in the Medical Register in the same manner as all other medical men residing in the province, to recover the tax for the medical chamber from him, and to bring him under their jurisdiction in questions of medical ethics.

The Retirement of Professor Heubner.

Professor Heubner, the well-known specialist for diseases of children, has left his post as ordinary professor of pædiatrics at the University of Berlin and director of the pædiatric department of the Charité Hospital. At the occasion of his final lecture all his former and present assistants assembled in the lecture-room together with the students. Professor Finkelstein presented a "festschrift" edited by the different assistants, and announced that a fund had been collected under the name of the Professor Heubner Fund for the support of clinical and therapeutical researches in pædiatrics. A premium from the interest of the fund is to be distributed every three years to workers in the above branch of medicine.

Statistics of Deaf-mutism.

According to the statistical journal edited by the Prussian Statistical Office the number of deaf-mutes in Prussia registered at the last Census was 34,804, of whom 18,659 were men and 16,145 were women. It is remarkable that the relative number of deaf-mutes has continuously decreased since 1871; in 1871 there were 9·9 deaf-mutes registered for each 10,000 of the population, but only 8·7 in 1910. The Eastern Provinces of Prussia have relatively the greatest number of deaf-mutes, the ratio per 10,000 being 17, 16, 15, and 11 cases in East Prussia, West Prussia, Posen, and Pomerania respectively. In the Western Provinces, Rhenish Prussia, Saxony, Westphalia, Schleswig-Holstein, and in the district of Berlin only 5 to 7 cases occurred for each 10,000. The Jews have the largest proportion of deaf-mutes—namely, 14·4 per 10,000; among the Protestants the corresponding number is 9·9, whilst among the Roman Catholics it is 10·3. In the year 1910, of the men 27·5 per cent. were married as compared with 13 per cent. in 1880. The increase of marriages is certainly caused by the fact that a better training of the men

enables them to provide a home. This is also illustrated by the fact that 2195, being 117·6 of each 1000, were established in independent positions as compared with 60·8 per 1000 in 1880. The majority of deaf-mutes are engaged in tailoring and in agricultural work. There are 48 institutions in which 5050 deaf-mute children are being trained by 612 teachers.

The Berlin Medical Society.

At the last general meeting of the Berlin Medical Society the honorary secretary, Professor von Hansemann, gave a report of the business of the society. He stated that the number of members was 1714, of whom 22 were honorary and 9 were life members. The society had met 34 times, when 44 lectures were delivered. The number of members had increased by 93. Two of the honorary members, Lord Lister, of London, and Professor Armaur Hansen, of Bergen, had died. The treasurer, Professor Stadelmann, reported that the funds of the society amounted to 280,900 marks, or £14,045. The librarian, Dr. Hans Kohn, said that the reading-room had been visited 10,461 times by members and 11,433 times by their friends. There were 206 medical journals kept in the reading-rooms. The catalogue of the library contains 46,340 volumes, including medical journals and books. During the last year a union of the libraries of nearly all the other important medical societies of Berlin has taken place, the societies having placed their libraries under the control of the Medical Society, paying a certain sum for the use of the reading-room and the salary of the attendants. Considerable sums could be saved because it was no longer necessary for each society individually to subscribe for the same journals. The assembly-room of the society in the Langenbeck House, which is the property of the German Surgical Association and is rented from it, is much too small, and the Medical Society will therefore build new premises under the name of the Virchow House. It is intended to begin the work in October next, and to have it finished in October, 1914. The committee of the Berlin Medical Society was re-elected, Professor Orth being chosen president.

A Medical Excursion to Great Britain.

In connexion with the International Medical Congress in London the central committee for medical excursions will arrange an excursion to England, Scotland, and Ireland. The party will start on August 3rd by special steamer chartered from the Hamburg-America line. They will arrive on August 5th in London, where lodgings will be ready for them at De Keyser's Royal Hotel, Blackfriars. The stay in London will last until August 12th, when they will re-embark on their special steamer and first proceed to Scarborough, where they will arrive on the 13th, leaving the same evening for Leith. The 14th will be spent in visiting Edinburgh, and the 15th in making a trip to the Scotch lakes, including Loch Lomond, Loch Katrine, the Trossachs, and Callander. The next stopping places will be Aberdeen, Stornoway (in the Hebrides), Oban (with a trip to Staffa), Glasgow, Belfast (with a trip to the Giants' Causeway), and Kingstown (with a trip to Dublin). The Channel Islands will be the last British territory visited by the party, which will then go to Rotterdam, from where they will reach Hamburg by steamer on August 28th. The expenses are from 875 to 1400 marks (£43 15*s.* to £70), according to the cabin. No doubt the excursion to Great Britain will be a success, as was the case with the great trip to America last year, arranged also by the central committee for medical excursions on the occasion of the International Congress on Hygiene.

March 31st.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Lectures to Students on Questions in Medical Ethics.

THE difficulties of the first few years in practice are in no small degree increased by the problems of medical ethics and economics, which I regret to say are not fully understood by many graduates of our universities. The "Organisation" of the Vienna practitioners has therefore arranged a series of lectures dealing with various subjects necessary to be known by the young practitioner, but especially intended for students of medicine, for it is to them that the Organisation appeals, since they will form the backbone of the medical Organisation in the near future. The most interesting of the lectures, of which some have been already delivered before large audiences, dealt with the relations between the practitioner and (1) the general public, (2) the municipal and state authorities, and (3) public and private corporations, including the sick clubs or Krankenkassen and contract practice generally. A large share of the lectures was allotted to the problems of income taxes and duties, as well as to the position of medical men in forensic cases, a position which is not an enviable one, and it was shown how the new "Penal Code Act" would, if it became law, improve the forensic relations of medicine. As the lectures were well attended the Organisation has decided to continue the experiment.

Sick Clubs and their Medical Officers in Lower Austria.

On Feb. 1st the medical officers of all the sick clubs or Krankenkassen belonging to the various guilds in Lower Austria discontinued, after due notice, their work in the service of these clubs, and restricted themselves to giving medical aid to the men belonging to them at the ordinary fees for private practice. All administrative work such as notification of disease in connexion with contract practice is stopped. The medical officers have given an explanation of their attitude in a pamphlet, addressed to employers and employees alike, setting forth their grievances in six articles, to the following effect: 1. The Union of the Sick Clubs does not recognise the arrangement, as regards contract practice, arrived at between the delegates of medical councils and of the "Committee of the Sick Clubs of Austria" some time ago. 2. The sick clubs want to subject the medical men to the control of non-medical officers. 3. The work of the medical officers is being constantly increased to the detriment of the sick members, whilst their remuneration remains unaltered. The medical officers, therefore, wish to be paid at the rate of so much per patient, and not by a fixed salary without reference to the number of members allotted to each medical officer. 4. The specialists appointed by the "Union" can only be consulted by patients who are not confined to bed, whilst those requiring the advice of specialists, if they cannot go out, must become in-patients in a hospital. 5. The appointment and allotment of the medical officers' districts are matters to be decided not by the local committee of the sick club, but by the "Union." 6. The medical officers object to patients with an income of more than £100 a year being retained on the list of the sick club, and refuse to treat them at the reduced rates of the sick club. For all these reasons the medical officers resigned their appointments at the same time, taking steps to hinder the "Union" from getting other men to take up the work. The conflict has now been going on for two months; the clubs pay their sick members 150 per cent. of their regular sick pay, and provide them with medicine, but not with medical advisers. It appears already that the extra 50 per cent. which the clubs are now paying over and above the regular sick pay is more than they used to spend in the remuneration of the medical officers, and therefore they are trying to find a pacific solution of the difficulty. The profession hopes that the result will be in its favour.

The Winter Term of the Medical Session.

The winter term of the medical session 1912-13 has now terminated, and by this time it is known that the number of medical students has again increased, especially in the German-speaking Universities. In Vienna it has been marked by the erection of the new buildings for anatomical dissection, as well as by the beginning of the Chemical Institute, which will be ready in about a year's time. Since the official commencement of this term in October, 1912, two new hospitals have been established, and four professorships have become vacant, partly through the operation of the age limit of 70 years and partly through death.

March 31st.

MEDICAL MAGISTRATE.—Mr. J. Wheeler-O'Bryen, L.R.C.P. & S. Edin., has been appointed a justice of the peace for the county of London.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

The Parliamentary Session.

THE third session of the first Parliament of the Union of South Africa has been opened, but it is not anticipated that it will be of long duration, for the differences between General Botha and General Hertzog on the subject of the relationship of South Africa with the rest of the Empire, which led to the exclusion of General Hertzog from the Cabinet, have caused a widening breach between the two wings of the party in power. It is evident, at any rate after a perusal of the Governor-General's speech at the opening of Parliament, that during this session there will be no legislation of medical interest introduced by the Government. A private measure has, however, been introduced into the Senate which, from the welcome extended to it by Mr. Sauer, the Minister of Native Affairs, on behalf of the Government, should stand a good chance of being passed into law. This is a Bill purporting to deal comprehensively with the question of the protection of child and infant life. In terms of this measure a child includes an infant, and is to be regarded as a person under 16 years of age. The most salutary and severe penalties are prescribed for all forms of cruelty to or for neglect of children. A magistrate, when passing a sentence on or committing for trial any person under the measure who has been charged with neglect of or cruelty to a child, is to be empowered simultaneously, should he think fit, to commit the child to the custody of any person or institution approved of by him that is willing to receive the child. The measure repeals the existing Infant Life Protection Acts of the Transvaal and the Cape and incorporates the provisions of these Acts, or many of them, in a more practical form. It empowers local education authorities to carry out the medical examination of school children, and to deal with children attending school who are in a dirty or verminous condition, or who are suffering from any contagious or infectious disease.

The University Bill.

Mr. Malan, the Minister of Education, has introduced the Bill prepared by him for the establishment of a South African Teaching University at Groot Schûr on a portion of that magnificent estate left by Cecil Rhodes in trust to the nation. The Bill is meeting with a great deal of hostile criticism from the Government back benches. It has not been welcomed very warmly in medical circles, for its provisions are quite inadequate from the point of view of medical education, and it is thought that, although it is generally recognised that the time has not arrived for the establishment of a complete medical school, provision should be made in the Bill to enable such a school to be established whenever it is found practicable in the future. There are a number of objectionable features in the Bill which will doubtless be brought out in debate by the medical members of the House. It is not considered probable that the measure will become law, as a majority of the Government party are strongly opposed to it, but the Bill, if suitably amended, would have gone a long way towards placing higher education generally in South Africa on a much more satisfactory basis than it can ever be under existing conditions. Moreover, there is the danger that the Beit legacy of £500,000 towards the founding of the proposed University may be forfeited unless the scheme is carried out without further delay.

Proposed Restriction of the Cultivation of Dagga.

The Minister of the Interior was recently questioned in the House as to whether the Government intended to take any steps to prohibit the growth and sale of dagga. He stated in reply that the Government was fully alive to the evil effects the consumption of dagga was having upon the coloured and native populations of the Union, but that it was not prepared to take steps in the direction desired for the present. He thought that the whole subject could be best dealt with in the Public Health Act.

Need for Reform in the Administration of the Lunacy Laws.

Nearly three years have elapsed since the Union of South Africa was established, but no steps appear to have been taken to prepare a consolidating Bill dealing with lunacy. Consequently the law remains different in each of the four provinces, and the existing laws are mostly antiquated and out of date. All that appears to have been done is to concentrate the administration of these laws under one department in the administrative capital, and this is perhaps responsible for most of the difficulties that would seem to have arisen, as the Department of the Interior is not equipped with the services of an expert adviser, and has to seek advice from the officers in charge of the different asylums whenever it requires guidance, or alternatively to act without obtaining such advice. The result is that no settled policy is being pursued in regard to the administration of the lunacy laws generally, and this is unquestionably responsible for much of the friction and confusion which are occurring at the present time. Moreover, the work of the different asylums is not being properly coördinated, and each asylum is being administered according to the views of the particular medical superintendent in charge thereof. The chaos which now exists was well brought out in the correspondence recently published by a practitioner at Kimberley which has passed between himself and the Minister. At the present time it is certainly the dread of every medical man in practice lest he should be called in to see a patient with acute mental trouble necessitating certification, for, no matter how urgent a case may be, it usually takes weeks, and often months, before authority to send the patient to an asylum is received, and during the interval the practitioner as often as not has the responsibility of looking after the patient under most unsuitable and improper surroundings, or, if the patient is a pauper, he has to hand the case over to the district surgeon to be dealt with where the magistrate thinks best. Apart from the inconvenience of these long delays there can be no question but that at the present time a large number of early mental cases—that would, given proper treatment from the start, stand good chances of recovery—become chronic, because in the absence of suitable accommodation proper treatment cannot be carried out. The matter is really becoming urgent. From time to time grave scandals leak out; questions are occasionally asked in Parliament; the matter is then generally stated to be still under the consideration of the Government, and it then drops until a further scandal occurs.

Robben Island Leper Asylum.

For a long time past dissatisfaction has been expressed with the system of administration at Robben Island, and recently there have been very disquieting rumours. It is suggested that the island is being administered on principles that are radically unsound, and that the sooner the institution is reorganised on modern lines the better it will be for the patients and the community generally. The first step might well be to remove the lunatics and convicts from the island and to use the extra accommodation thus secured for the grading of the patients according to the stage the disease has reached and according to their class in life. Also the administration of the island should be taken out of the hands of a lay Commissioner and the entire island placed under the control of an experienced medical superintendent, who should have full authority to reorganise the institution in accordance with modern ideas. It is understood that a strong movement will be made shortly in Parliament during the present session either for a Select Committee or an outside Commission to inquire into the existing methods of administering the leper asylums in particular, and especially that at Robben Island, and the leprosy laws in South Africa in general. On Jan. 30th the Governor-General and Lady Gladstone, together with the Minister of the Interior, paid an official visit to Robben Island. The object of the visit was to open an exhibition of work by leper patients on the island, but it appears that both the Governor-General and the Minister took the opportunity of inquiring into the methods of administration in vogue.

District Surgeons' Grievances.

There is a growing feeling of discontent amongst the district surgeons of the Union, who are under the administration of the Department of the Interior. Unless allayed by more considerate treatment this discontent is bound to come to a head sooner or later. At present the district surgeons are still working under the old provincial tariffs that existed prior to Union, although in certain of the provinces fees had been reduced during the

financial depression. There is considerable disparity between the allowances and the fees paid in the different provinces. Moreover, prior to Union in certain of the provinces district surgeons were under the control of the principal medical officer of health, and were enabled to appeal directly to him against any decision affecting their work given by resident magistrates or other local officials. Since Union the district surgeons have all come under lay control and complaints are general on all sides. The new tariff of witness fees, moreover, hits a district surgeon exceedingly hard. There are many other matters requiring adjustment, and it is to be hoped that the Government will take the opportunity of attending to them when the district surgeons' regulations for the Union come to be prepared.

Feb. 8th.

CHINA.

(FROM OUR OWN CORRESPONDENT.)

The Death of the Empress Dowager.

IN the Palace at Peking early in the morning of Feb. 22nd died the Lung Yü Empress Dowager. Though this event at the present juncture has little political significance, it will be remembered what an important part the late Empress played in shaping recent Chinese history. By abdicating during the Revolution in defiance of the truculent protests of her Manchu kinsmen she certainly saved the country much bloodshed and misery. This act incurred the bitter resentment of her clan—a resentment, it is said, many of them took no pains to conceal. There can be little doubt that the anxiety of the past 18 months materially affected her health. Though it had been known for some time that the Empress Dowager was in failing health her death came as somewhat of a surprise to the general public. It was freely rumoured that Her Majesty had committed suicide, and that she had been moved to this act through chagrin at not being treated with sufficient consideration in the arrangements for the removal of the Court from the eastern to the western part of the Forbidden City. Also it was said that she felt most keenly the lack of respect shown her by the Manchu princes on the occasion of her birthday celebrations, which took place on Feb. 11th. There seems no reason to believe that these reports of suicide had any foundation.

Five days before her death the late Empress Dowager received two American ladies, who were permitted to photograph her and the boy Emperor. The visitors remarked that Her Majesty looked extremely ill and had œdema of the face. Subsequent official reports seem to indicate that renal or cardiac disease was the malady from which the Empress suffered. The following accounts, translated from native newspapers, are of interest as showing purely Chinese methods of treatment. Though a Chinese doctor, named Chüeh Yung-ch'in, who had received a Western education, was sent to the Palace by the President, Yüan Shih-kai, he was not allowed to see the Empress Dowager.

Extract from the newspaper *Ya-hsi-ya Pao* of Feb. 24th:—

The Imperial doctor, Ch'ang Tsuan-Yüan, reported that on Dec. 28th of last year the Empress Dowager showed symptoms of swelling, which started at the ankles and gradually rose till it reached the hips. It was not till Jan. 10th that Her Majesty summoned doctors of the Imperial Medical Board. Dr. Ch'ang went in to treat the case. His opinion was that the disease was of the nature of œdema. He ordered *wu-fu san* (a powder made from several kinds of *pachyma cocos*, a fungus which grows upon the roots of firs) as a diuretic, without successful result. Then stronger medicines were administered—viz., *ling-shu* (roots of species of *atractylodes*), *chih-tsao* (*hovenia dulcis*), and *chiu-chün* (matured native wine), which together compose a strong diuretic. Fluid was evacuated both from the bowels and by the urine, and the swelling subsided. Ginseng was administered both as a tonic and in order to help digestion. On account of indiscretions in diet œdema again appeared on Feb. 1st, and became more extensive than it was previously. In the space of one night the swelling reached as high as the hips. On Feb. 2nd Dr. Ch'ang was again summoned to the Palace and made use of the old prescription with a few additions—viz., of *ting-li* (seeds of *draba nemoralis*, which resembles mustard) and of ginseng. Fluid was again evacuated, but the stomach had become very weak, and the doctor ordered such tonics as *ssü-chün-tzü-t'ang* (a decoction composed of ginseng, *atractylis ovata*, *pachyma cocos*, dried licorice root, ginger, and dates), *i-i* (*coix lachryma*), and *pien-tou* (the bean *dolichos lablab*), in order to produce stimulation. On Feb. 5th another dose of diuretic medicine was given. By Feb. 14th the swelling had totally subsided, and two days later all signs of disease had disappeared.

It will be remembered that Feb. 15th and 16th were the days on which the birthday celebrations took place, and Her Majesty came out to the audience hall to receive congratulations. No doubt she was much fatigued after these exertions, and on Feb. 17th she felt cold sensations in her limbs. Dr. Ch'ang prescribed some diaphoretics, such as *kuei-chih* (tips of young branches of *cinnamomum cassia*), to cause profuse perspiration. The disease was alleviated, but at 10 o'clock in the morning of Feb. 21st a violent chill supervened and the condition became very critical. Dr. Ch'ang ordered the following medicines: *kua-lou* (*trichosanthes multiloba*, a kind of bryony), *pan-hsia* (*pinellia tuberifera*), *chü-hung* (orange-peel), and *chu-li* (bamboo sap), but without any effect. The breathing became very laboured and the pulse was intermittent. Then Dr. Ch'ang administered some medicine called "Powder for Stimulating the Pulse," to which were added a few other ingredients, such as bamboo sap, orange-peel, and ginger juice. After taking this mixture Her Majesty was not much relieved, so Dr. Tsao Yüan-sun was summoned. Dr. Tsao changed the prescription and used *shih hu* (yellow stalks of an epiphyte, *dendrobium ceraja*, which grows on stones), *shih-kao* (calcium sulphate), *chên-chu* (*phyllanthus urinaria*), *mou-li* (shells of the rock-oyster), *lung-tao* (fossil bones), *fu-shên* (*pachyma cocos*, a fungus that grows on the roots of firs), *kua-lou* (seeds of a kind of bryony), bamboo juice, and orange-peel. However, all these had no beneficial effect, and the Empress Dowager died at 2 A.M. on Feb. 22nd.

Another paper, the *Kuo-chüan Pao* of Feb. 23rd, published a long editorial discussing the cause of the Empress Dowager's death. After referring to the annoyance caused Her Majesty by the insolent behaviour of the Manchu princes and of some of the Imperial concubines, it dwelt upon the Empress's disappointment that after a year of Republican government the country was still in such an unsettled state. None of the various possible factors, however, were considered so likely to have brought about the fatal termination to the Empress's illness as the treatment carried out by the Court physicians. As the writer remarked, the drugs used were numerous, and the prescriptions ordered by the various doctors were not harmonious in their actions.

The writer continued: "We have contrived to get copies of prescriptions from the Imperial household. The first one is written by Dr. Tsao, who respectfully requested permission to feel the Imperial pulse, and gave his opinion as follows: 'The three sections of the left hand pulse are slow and weak; the section an inch above the wrist on the right side has but little strength. Breathing is extremely difficult and she cannot lie down. Phlegm is continually rising. Her strength is exhausted and perspiration is too profuse. The dorsum of the tongue is black as charcoal, but on each side the surface is natural. Her strength is rising up and the central part of the body is left exhausted. I have grave fears that œdema of the lungs will be so extensive that suffocation will result. I propose to imitate the methods followed by the eminent authority Man-chien, and further, attempt to make my prescription according to the principles expounded by the Taoist priest Sun.'"

Here followed a copy of Dr. Tsao's prescription, containing 13 ingredients, most of which have been already mentioned above.

Peking, March 10th.

Obituary.

ALFRED LEWIS GALABIN, M.D. CANTAB., F.R.C.P. LOND.,

CONSULTING OBSTETRIC PHYSICIAN TO GUY'S HOSPITAL; LATE FELLOW OF TRINITY COLLEGE, CAMBRIDGE.

WE regret to announce the death of the well-known obstetric physician and author, Dr. Alfred Lewis Galabin, which occurred at the age of 70 from pneumonia, after only five days' illness, on March 25th, at his residence at Bishopsteignton, Devon.

Alfred Lewis Galabin was born on Jan. 10th, 1843, and received his education at Marlborough and at Trinity College, Cambridge, where he was a foundation scholar and also Wrangham gold medallist. He graduated at Cambridge in 1866 as a double first in classics and mathematics, which was already becoming a rare distinction. He was seventeenth wrangler and also bracketed eighth in the classical tripos of the same year, and was duly elected a Fellow of his College. Having decided to enter the medical profession, he proceeded to the medical school at Guy's Hospital.

He took the Membership of the Royal College of Surgeons of England in 1872, and in the following year graduated as M.D. at Cambridge. He took the Membership of the Royal College of Physicians of London in 1874. In that year he was appointed lecturer on clinical midwifery, in 1875 obstetric assistant physician, and in 1876 lecturer on diseases of women in Guy's Hospital. He became a Fellow of the

Royal College of Physicians of London in 1878, and 20 years later served on the Council. In 1884 he was appointed full obstetric physician and in 1887 lecturer on midwifery, all of which posts he held until he passed on to the consulting staff at Guy's in 1903. He was also for a time assistant physician to the Hospital for Children, Great Ormond-street.

A testimony to the range and accuracy of his professional learning, as well as to his academic distinction, may be found in the number of examinerships which he held. In the "eighties" and "nineties" Dr. Galabin was several times examiner to the Royal College of Physicians. He was also examiner in obstetrics at the Universities of Oxford, Cambridge, and London. He held most of the offices in the Obstetrical Society of London, and was president in 1899–90.

In 1873 Dr. Galabin published a small work on "The Connection of Bright's Disease with Changes in the Vascular System," and several of his early communications to the medical press dealt with the circulatory system. His first work on the subject with which his career was subsequently identified was his "Students' Guide to the Diseases of Women," published in 1879. Terse and clear in style and pleasant to read, it bore evidence of erudition, careful observation, and sound judgment, and in many places, particularly in regard to the pathology and morbid anatomy of the conditions dealt with, displayed its foundation of original work. It was, in fact, for its size, the best and most complete work on the subject. The sixth edition, which appeared in 1903, was substantially a new book. The author's extensive practical experience and his intimate acquaintance with the special needs of students, gained in a long association with them both as teacher and examiner, fitted him peculiarly for his task, and the book displayed one of his marked personal characteristics, his well-balanced judgment enabling him to present fairly both sides of a debatable point. In 1886 was published his "Manual of Midwifery," which also speedily became deservedly popular and was given first place among the treatises on that subject in the list of text-books for students issued in THE LANCET, which in those days was published every year in the Students' Number. This book also reached a sixth edition in 1903. In 1910 a seventh edition, written in collaboration with Dr. G. F. Blacker, appeared under the title of "The Practice of Midwifery." It was greatly enlarged, brought well up to date, and it is widely regarded as one of the best text-books on the subject yet published by English authors. Galabin's knowledge of mathematics enabled him to demonstrate and prove many points which were often obscure in the works of other obstetricians, and although his tendency to resort to mathematical proofs in his books did not always appeal to student readers, yet it gave a real and enduring value to his writings, more particularly those dealing with the mechanism of labour and the development of the pelvis. He was a clear thinker and speaker, and on the many occasions in which he took part in discussions at the various societies he was always listened to with attention and respect. If he made no important addition to our knowledge of midwifery, his writings and teaching influenced large numbers of students, and his "Manual of Midwifery" remained without a serious rival as an authoritative text-book for a number of years.

Dr. Galabin was not a prolific contributor to the medical press, most of his communications being made to various societies and appearing in their Transactions; what he did write was characterised by good judgment and balance. For some years he was the editor of the *Obstetrical Journal of Great Britain and Ireland*, and in this, among other papers, he wrote on the Action of the Midwifery Forceps; the Effect of the Frequent and Early Use of the Midwifery Forceps upon the Fœtal and Maternal Mortality; the Occurrence in Normal Labour of Obliquity of the Fœtal Head; the Choice of the Leg which should be Seized in Version; on a case of Extra-uterine Fœtation not Primarily Tubal (Primary Abdominal Fœtation); and on a New Form of Axis Traction Forceps. His contributions to the discussions on the Production of the Shape of the Oblique Pelvis; on the Obstetrics of the Kyphotic Pelvis; and on Scarlatina during Pregnancy also were published in this journal. Among his other contributions to medical literature many were of considerable value, and mention may be made of his report on Puerperal Pyrexia, published in 1884, in the Collective Investigation Record of the British Medical Association.

Mr. R. Clement Lucas writes:—"The death of Dr. Alfred Galabin removes one more from that inner circle of intimate friends formed during my student days and firmly maintained throughout life. A true and always loyal friend was Galabin. How well I remember his arrival at Guy's Hospital, with his extraordinary reputation as a 'double first' from Cambridge, and with what critical eyes we scanned the new recruit to trace wherein his great powers lay. A pale, black-haired, slight, delicate, spectacled man, clearly no athlete, he was probably reared with books as his early companions, at a time when many boys are demonstrating their evolution by violent sports. A closer inspection showed a face of the highest intelligence, calm and gentle, on which boisterous mirth would never find even a temporary resting-place, though under amusement the features would relax into a very sweet smile. His dignified integrity of character and sound judgment adorned the branch of the profession which he chose, and which in a previous generation had contained occasionally members not unjustly subjected to adverse criticism. Dr. Galabin's manner, no less than his obvious code, at once silenced the vulgarity that was two generations ago too frequent in the chamber of inheritance. He was universally trusted. At the time of Galabin's appointment to the post of obstetric physician at Guy's Hospital this officer was limited to the operations of labour, whilst ovariotomy and hysterectomy were performed by the surgeons. About this time several physicians engaged in this special department elsewhere began to extend their sphere to the uterine appendages, and even further in the abdomen, and claimed the title of gynæcologists. Galabin pressed this claim with a quiet persistence at Guy's, and though it was at first objected that obstetricians were not trained surgeons, permission was eventually given to perform the operation of ovariotomy, and this gradually led to the withdrawal of such cases from the general wards and to the appointment of obstetricians with a surgical training. As a teacher Dr. Galabin was too undemonstrative to be popular with the bulk of students, and his lectures, carefully prepared and full of good material, lost weight by being read without emphasis; but he was universally esteemed for his exact knowledge, and those who wanted to learn knew the value of his teaching. His high mathematical knowledge obtained useful employment in the mechanics of labour, which found expression in his book; but the average students dreaded lest this mathematical knowledge would be expected of them when he was examiner. From what I have said it will be gathered that Dr. Galabin was valued most by those who knew him best. He was a man of the highest intelligence, kind-hearted, and of the most amiable disposition, always a friend in trouble or difficulty, and universally respected in his profession."

THE NATIONAL INSURANCE ACT.

THE Insurance Commissioners have issued a revised form of Agreement (Form Med. 29) between medical practitioners and Insurance Committees. This Agreement, which will take effect on April 14th, 1913, refers only to the capitation method of payment. The wording of the terms and conditions of service differs in various respects from that in the former Agreement, and the schedules have been recast.

NATIONAL INSURANCE PRACTITIONERS' ASSOCIATION.

A largely attended meeting of medical practitioners, convened by the National Insurance Practitioners' Association, was held on March 27th at the Westminster Palace Hotel, London, Dr. Lauriston E. Shaw being in the chair. The meeting expressed its satisfaction at the decision of the Insurance Commissioners that no further wholesale "signing on" of insured persons would be required, and urged practitioners to give the suggested card system a careful and thorough trial. The question of the limitation of lists was vigorously discussed, and it was resolved that further experience must be gained before it could be decided how many insured persons each medical man could treat. The opinion was emphasised that at the termination of the present quarter all moneys for medical benefit should be allotted to each practitioner then on the panel in proportion to the number of insured persons on his list, regard being had to the date at

which the practitioner came on the panel, and it was urged that after the first quarter the allotment of persons who had not chosen their medical attendant should be carried out by a subcommittee appointed by the panel practitioners of each district, in accordance with a previously approved scheme. The meeting considered it imperative that medical representatives on Insurance Committees and on the Advisory Committee should use their influence to limit the number of officially recognised institutes and dispensaries, and to secure constant supervision in order to ensure compliance with the Regulations. The provision of medical attendance for persons on holiday and also for those away from their own area whilst ill or convalescent was discussed. Resolutions were passed that no deduction should be made from the funds at present available for medical benefit for the purpose of meeting any deficiency arising in particular cases, but that a separate and additional fund should be provided by the Government for the payment of attendance on migratory insured persons. A resolution was passed urging practitioners on the panel to consider the formation of a pension fund by means of contributions to be deducted *at the source*.

THE NATIONAL MEDICAL UNION.

To the Editor of THE LANCET.

SIR,—There are many practitioners who, having served on the panel during the "first period" of working the National Insurance Act, are now determined to give up the work. We desire through your columns to remind all who have reached this decision, and who are not already enrolled, that membership of the National Medical Union is limited to doctors who decline to take work of any kind under the Act until the conditions of service are acceptable and in conformity with the dignity and honour of the profession.

The purpose of the Union is the protection of the interests of its members and of those of their brethren who retire from service under the Act, and the maintenance of the right of insured people to freedom in their choice of doctor. It is earnestly hoped that all who are in sympathy with these objects will assist in the effort to attain them by becoming, if possible, members of the Union, and that in any case they will communicate with the honorary secretaries at once. Those medical men who are in a position to supply concrete examples of injustice and other evils consequent on the working of the National Insurance Act are invited to forward details to the offices of the Union, together with any suggestions they may wish to make.

The National Medical Union, it should be noted, is not a trades union, and its members are opposed to the suggestion that the defence of the medical profession should be undertaken on trades union lines.

We are, Sir, yours faithfully,

J. S. PROWSE,
E. W. FLOYD,
Honorary Secretaries, National Medical Union.

5, John Dalton-street, Manchester, April 2nd, 1913.

Medical News.

UNIVERSITY OF ABERDEEN.—At the graduation ceremony on March 26th the following degrees, among others, were conferred:—

Degree of Doctor of Medicine (M.D.).—*Benjamin James Alcock, *Farquhar Macrae, *Alexander Frank Wallace, William Ainslie, and John Ritchie.

Degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.).—Second-class Honours: Lawrence Weir Bain and William Percival Mulligan. Ordinary Degree: Gavin Alexander Elmslie Argo, William Baxter, Robert Masson Boyd, Robert Walker Brown, William Mennie Fowler, Alastair Robertson Grant, Frank Griffith, John Humphrey, Joseph Jaffé, James George Johnstone, Alexander Campbell White Knox, William McCombie, Anthony John McCreadie, Alexander George McLean, John Ross MacNeill, Frederic Crompton Merrall, Leonard James Moir, John Proctor, Alexander Lawrence Robb, Benjamin Theodore Saunders, James Smith Stewart, Frederick George Stuart, Adam Annand Turner, John Taylor Watt, and Joseph Lockhart Downes Yule.

Diploma in Public Health.—James Chalmers, George Leggat, Patrick Manson Rennie, and John Maxwell Taylor.

* Honours for thesis.

UNIVERSITY OF DURHAM.—At examinations held recently the following candidates were successful:—

THIRD EXAMINATION FOR THE DEGREE OF BACHELOR OF MEDICINE.

Materia Medica, Pharmacology and Pharmacy, Public Health, Medical Jurisprudence, Pathology, and Elementary Bacteriology.—Patrick Alexander Clements, College of Medicine, Newcastle-upon-Tyne; Arthur Causton Freeth, St. Mary's Hospital and College of Medicine, Newcastle-upon-Tyne; Charles Stewart Parnell Hamilton, Charing Cross Hospital; Frank Wilson Harlow and William Herbertson, B.Sc., College of Medicine, Newcastle-upon-Tyne; Charles Henry Keay, College of Medicine, Newcastle-upon Tyne (Second-class Honours); Ah Chit Jap, M.R.C.S., L.R.C.P., Guy's Hospital; Claude Woodham Morris, M.R.C.S., L.R.C.P., University College, London; Gerald Douglas Newton, College of Medicine, Newcastle-upon-Tyne; Home Alexander Playfair Robertson, St. Bartholomew's Hospital and College of Medicine, Newcastle-upon-Tyne; Eric Knowles Ryan, University of Sheffield; Donald Charles Scott, Guy's Hospital; and Charles Gordon Strachan, Alexander Gordon Taylor, and Edgar James Tyrrell, College of Medicine, Newcastle-upn Tyne.

Public Health, Medical Jurisprudence, Pathology, and Elementary Bacteriology.—Ernest Bramley, Andrew Govan Macfarlane, and Arthur Patterson, College of Medicine, Newcastle-upon-Tyne.

THE MARY YOLLAND HOME.—The Home for Incurable Children at Northcourt, Hampstead, is now well known to many, but the girls are not kept after the age of 16 at this home, nor admitted into the large Streatham and Putney Homes for Incurables until they are 30 and 35. It is therefore often a problem how to dispose of them during the intervening years, for they are frequently homeless or dependent on parents who cannot afford to give them the care and attention so necessary to maintain any benefit that may have been derived from previous treatment. In order to meet this situation the first Intermediate Home for Girls, known as The Mary Yolland Home, was opened at Upper Hale, near Farnham, about three years ago. It is primarily intended for the cases from Northcourt, for whom the charge is 7*s.* a week, but when there are vacancies girls from other institutions are admitted for a small extra payment (usually 8*s.* a week). This is not, of course, sufficient for the upkeep, therefore subscriptions and donations are gratefully received by the hon. treasurer, at 14, St. Stephen's-square, W. All applications for admission must be made on printed forms to be obtained from the hon. secretary, 5, Kensington-square, W., and must be approved by the medical officer and committee. No epileptic, mentally afflicted, or phthisical person is eligible for admission. There are ten beds and there is a vacancy now. The president of the home is the Lord Bishop of Winchester, and there is a strong representative local committee (in addition to the committee of management in London). Dr. S. A. Coad, of Farnham, is the honorary medical officer, and Dr. A. J. Rice-Oxley, London, W., is the honorary consulting physician. The home is excellently situated on high ground above Farnham, and has a pleasant, well-stocked garden. The girls are taught and encouraged to do needlework, and won gold stars at the Home Arts Exhibition at the Albert Hall in May, 1911. They are glad of orders, and receive 15 per cent. on all articles sold. Anyone caring to visit the home will be gladly welcomed by the matron, under whose care some of the patients have improved most wonderfully.

ROYAL MEDICAL BENEVOLENT FUND.—At the March meeting of the committee 30 cases were considered and grants amounting to £264 made to 25 of the applicants. Appended is an abstract of the cases relieved:—

Daughter, aged 69, of late M.R.C.S. Used to be a matron of a private asylum, but had a serious accident a few years ago and is now practically dependent on her friends. Voted £10.—Daughter, aged 74, of late M.R.C.S. Maintained herself for many years as a governess, but is now incapacitated by chronic arthritis. Only income £11 a year. Voted £10.—Daughter, aged 66, of late M.R.C.S. Was formerly a governess or companion, but had to undergo two serious operations and now finds regular occupation impossible. Voted £12.—M.R.C.S., aged 78. Has practised near London for many years, but had a serious accident six months ago and has in consequence lost most of his patients. Voted £10.—Widow, aged 34, of M.R.C.S. Lost her husband a few weeks ago and finds that when his affairs are settled there will be very little left out of the sum for which he was insured. Voted £5.—Daughter, aged 45, of late M.R.C.S. Kept house for her father for some years after old age compelled him to retire from practice, and at his death when nearly 90, was quite unprovided for, as his savings had been unavoidably spent. Has been trying to support herself, but is at present in very bad health and entirely dependent on her friends. Voted £10.—Widow, aged 47, of L.R.C.P., L.R.C.S. Irel. Since husband's death has supported herself as governess or companion, but at present has no post and is in temporary difficulties. Voted £10.—Daughter, aged 61,

of late M.R.C.S. No income and maintains herself and an elder invalid sister by making blouses. Relieved twice, £24. Voted £12.—Daughter, aged 57, of late M.R.C.S. Has been a chronic invalid for many years, and is consequently entirely dependent on this Fund and a sister who allows her 7s. 6d. a week. Relieved 15 times, £173. Voted £12.—Daughter, aged 62, of late L.S.A. Has maintained herself for several years by letting lodgings, but is in ill-health, and finds increasing difficulty in doing the necessary housework. Relieved four times, £48. Voted £12.—Widow, aged 68, of M.D., C.M. Glasg. Is allowed £14 a year by the Working Ladies' Guild, and receives a little help from a son earning 25s. a week. Health very feeble for many years past. Relieved 13 times, £148. Voted £12.—Widow, aged 68, of L.R.C.P. Edin. No income, and practically dependent on a daughter earning £1 a week as a cashier; health indifferent. Relieved eight times, £84. Voted £12.—Widow, aged 63, of M.R.C.S. Health feeble and consequently finds the help given by her sons, who only earn small weekly wages, insufficient for unavoidable expenses. Relieved 14 times, £159. Voted £12.—Widow, aged 39, of L.R.C.P., L.R.C.S. Irel. Lost her husband 15 months ago from new growth, and endeavours to support herself by taking boarders. Two children, aged 8 and 7, the elder a candidate for an institution. Relieved once, £10. Voted £10.—Widow, aged 89, of M.R.C.S. Income about £32 a year. Children unable to help. Relieved eight times, £61. Voted £12.—Widow, aged 66, of M.R.C.S. No income, and so crippled by rheumatism that self-maintenance is impossible. No children. Relieved ten times, £94. Voted £12.—Daughter, aged 64, of late M.R.C.S. Takes boarders and receives a little help from relations, but is unable to meet her unavoidable expenses without the assistance of this Fund. Relieved six times, £72. Voted £12.—Widow, aged 72, of M.R.C.S. Left quite unprovided for at husband's death, and supported herself for several years by massage, but is now dependent on an old age pension and a son-in-law who can ill afford to help. Relieved three times, £30. Voted £10.—Widow, aged 55, of L.S.A. Endeavours to maintain herself by taking boarders; health indifferent. Relieved seven times, £76. Voted £12.—Daughter, aged 49, of late M.R.C.S. No income, and finds great difficulty in obtaining suitable occupation. Relieved twice, £15. Voted £12.—Widow, aged 55, of L.R.C.P., L.R.C.S. Edin. No income; no children; health too feeble to allow regular occupation. Relieved nine times, £94. Voted £12.—Widow, aged 67, of M.D. Edin. Supplements help given by friends by taking a boarder, but at present is without one. Relieved three times, £18. Voted £6.—Daughter, aged 65, of late M.D. Edin. Maintained herself for several years but is now dependent on friends. Relieved twice, £20. Voted £10.—Daughter, aged 54, of late M.R.C.S. Is obliged to live with and nurse an invalid mother whose income is less than £13 a year. Relieved once, £12. Voted £12.—Widow, aged 72, of M.R.C.S. Only income £21 a year, which is insufficient for expenses necessitated by applicant's age and infirmities. Relieved twice, £10. Voted £5.

Contributions may be sent to the honorary treasurer, Dr. Samuel West, 15, Wimpole-street, London, W.

LEICESTER ROYAL INFIRMARY.—The board of governors of the Leicester Royal Infirmary have received the resignation of Mr. C. J. Bond of his appointment as senior honorary surgeon to the institution with very deep regret. At a special meeting of the board, held on March 26th, the following resolution was unanimously passed:—

That this board learns with deep regret the decision of Mr. C. J. Bond, F.R.C.S., to resign the office of senior honorary surgeon, which he has held with distinction to the institution. In accepting his resignation, which they do from necessity alone, the board feel they must refer to the history of Mr. Bond's long and useful association with the institution. Appointed house surgeon in 1883, his active connexion has remained unbroken until the present time. In 1886 he was appointed honorary assistant surgeon, and a few months later honorary surgeon, in which capacity the board acknowledge with gratitude his work in conjunction with the late Sir Charles Marriott in the introduction of modern aseptic methods into the Leicester Royal Infirmary. By his address on Surgery at the British Medical Association annual meeting in Leicester in 1905, and by his masterly opening of the discussion on Septic Peritonitis in the Surgical Section at the Association's Toronto meeting in 1906, the fame of the valuable work performed in Leicester became widely recognised by the profession, while his contributions to surgical literature and his work and writings on heredity and kindred subjects have established for him a reputation in which the board and his medical colleagues are proud in some measure to share. The board feel that it must be a great joy to Mr. Bond to know that during his memorable service to surgical science he has had the whole-hearted support of his colleagues, who have throughout been conscious of his great ability and his high character and intellect, while the modesty which has always characterised his work and counsel has not only made apparent the greatness of his services to the institution and to the public, but has endeared him to all who have had the privilege of working with him. Especially is this endearment realised by the resident medical staff, who in the finishing school of experience have found his advice of the utmost value, and have greatly gained by his wise counsel, most kindly and generously given in issues where tact, wisdom, and skill were demanded. To mark their appreciation of the eminent services which Mr. Bond has rendered to the institution, and to express their acknowledgment of his distinguished ability and his devotion to the best interests of the institution, the board take pleasure in submitting his name to the next quarterly meeting of the governors for election as an honorary consulting surgeon and a vice-president of the institution, in the knowledge that in this double capacity he will continue to give valuable help, advice, and counsel to the institution, in the administration of which his specialised skill and long experience have been invaluable.

Mr. Bond's retirement will not lessen his interest in the institution—a fact which has been recognised by his appointment as deputy chairman of the board.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Nurses' Registration Bill.

THE text of Mr. MUNRO FERGUSON'S Bill "to regulate the qualifications of trained nurses and to provide for their registration" is published. The Bill has the support of Dr. ADDISON, Mr. ALDEN, Mr. BRYCE, Mr. DUNCAN MILLAR, Mr. SCOTT DICKSON, Mr. REMNANT, Viscount WOLMER, Sir GEORGE YOUNGER, Mr. RAMSAY MACDONALD, Mr. FIELD, and Mr. KERR-SMILEY.

A memorandum prefixed to the Bill states the arguments which are put forward in favour of it. It goes on to say that the measure has been prepared at the instance of the Central Committee for the State Registration of Trained Nurses, which represents by delegation the British Medical Association, the Matrons' Council of Great Britain and Ireland, the Royal British Nurses' Association, the Society for the State Registration of Trained Nurses, the Fever Nurses' Association, the Association for the Promotion of the Registration of Nurses in Scotland, the Scottish Nurses' Association, and the Irish Nurses' Association, comprising not less than 30,000 medical practitioners and nurses.

Hitherto no minimum standard of knowledge for professional nurses has been defined or enforced. The object of the Bill is to ensure that the community shall have a guarantee that the nurses they employ are skilled in their professional duties, and through standardisation to give security to the public that the services of fully qualified nurses shall be readily obtainable.

The Bill establishes a "General Council for the Registration of Nurses in the United Kingdom," composed of persons appointed by the Privy Council, the Local Government Boards in the United Kingdom, associations of registered medical practitioners, and direct representatives of the nursing profession. The duties and powers of this Council are defined in Clause 10 of the Bill; amongst the most important of them are the standardisation of training and the examination and registration of nurses.

In 1905 a Select Committee of the House of Commons on Registration of Nurses, which took evidence during two sessions, unanimously reported that "Your committee are agreed that it is desirable that a register of nurses should be kept by a central body appointed by the State."

The registration of trained nurses is in force in Cape Colony, Natal, the Transvaal, and the Orange River Colony in South Africa, in New Zealand, in the province of Ontario in Canada, in the State of Queensland, Australia, in the Bombay Presidency in India, in 34 of the United States of America, in the German Empire, and in Belgium.

Clause 10 lays down that the duties and powers of the General Council for the Registration of Nurses in the United Kingdom shall be as follows:—

(1) To frame rules—
- (*a*) regulating their own proceedings;
- (*b*) regulating the issue of certificates of registration and the conditions of admission to the register of nurses;
- (*c*) regulating and supervising the course of training and the conduct of examinations and the remuneration of the examiners;
- (*d*) regulating the admission to the register of persons already in practice as trained nurses at the commencement of this Act;
- (*e*) regulating and supervising and restricting within due limits the practice of registered nurses;
- (*f*) defining the particulars required to be given in any notice under this Act.

(2) To appoint examiners and inspectors.
(3) To decide upon the places where and the times when the examinations shall be held.
(4) To issue and cancel certificates of registration.
(5) To publish annually a register of nurses containing the names, addresses, and qualifications of nurses who have been duly registered under this Act:
(6) To decide upon the suspension or removal from the register of the name of any nurse for any breach of the rules and regulations from time to time laid down under this Act by the Council, or for conduct disgraceful in a professional respect, and also to decide upon the restoration to the register of the name of any nurse so suspended or removed:
(7) To take proceedings against persons guilty of offences under this Act;

and generally to do anything necessary for the due and proper carrying out the provisions of this Act. No rules made under this section shall have effect until the same shall have been approved by the Privy Council, and the Privy Council may approve the rules either without or subject to such modifications as the Privy Council think proper.

Medical Officers of Health (Superannuation) Bill.

This Bill, which was brought in by Sir PHILIP MAGNUS in the House of Commons, is designed to provide for superannuation allowances

to medical officers of health employed by local authorities and for contributions towards such allowances by those officers. Statutory provision of a similar nature has been alread made for Poor-law medical officers by the Poor-law Officers' Superannuation Act, 1896, and for the officers of asylums by the Asylum Officers' Superannuation Act, 1909.

The Bill contains 21 clauses, many of which are for the purposes of machinery.

Clause 1 sets out the title of officers of health to superannuation allowances in the following terms :—

"Subject to the provisions of this Act, every officer of health appointed by a local authority, whether before or after the commencement of this Act, who either (1) shall complete an aggregate service of 35 years ; or (2) shall become incapable of discharging the duties of his office with efficiency by reason of permanent infirmity of mind or body not arising from his own misconduct ; or (3) shall attain the full age of 60 years, shall be entitled on resigning or otherwise ceasing to hold his office to receive during life a superannuation allowance according to the scale laid down in this Act. Where an officer of health has attained the age of 65 years, and the local authority under whom he shall then hold office are of opinion that it would be expedient in the interests of the public service that he should cease to hold office, it shall be competent for that local authority to require him to retire upon payment to him of the superannuation allowance to which he may be entitled under this Act."

Clause 3 contains the scale of superannuation allowances. It provides that "an officer of health who has served for ten years but less than eleven years shall be entitled to an annual allowance equal to fifteen-sixtieths of the average amount of his salary or emoluments during the five years ending on the quarter day which immediately precedes the day on which he ceases to hold office, with the addition of one-sixtieth of such average amount for every additional completed year of service until the completion of a period of service of 35 years when a maximum allowance of forty-sixtieths shall be granted."

Clause 14 fixes the scale of contributions. It is as follows :—

"The percentage amounts to be deducted annually for the purposes of this Act shall be as follows :—

In the case of officers with less than five years' service at or appointed after the commencement of this Act, two per centum of the salary for each year ;

In the case of officers with more than five and less than 15 years' service at the commencement of this Act, two-and-a-half per centum of the salary for each year ;

In the case of officers with more than 15 years' service at the commencement of this Act, three per centum of the salary for each year."

Milk and Dairies Bill.

Mr. BURNS, the President of the Local Government Board, has introduced in the House of Commons a Bill "to make better provision with respect to the sale of milk and the regulation of dairies." It has been read a first time.

In a Memorandum the objects of the Milk and Dairies Bill are summarised. The principal of these are to provide for (1) the more effective registration of dairies and dairymen; (2) the inspection of dairies and the examination of cows therein and the examination of milk ; (3) the prohibition of the supply of milk from a dairy where such a supply has caused, or would be likely to cause, infectious diseases, including tuberculosis ; (4) the prevention of the sale of tuberculous milk ; (5) the regulation of the importation of milk so as to prevent danger to public health arising therefrom ; (6) the issue of regulations for securing the supply of pure and wholesome milk ; and (7) the establishment by local authorities in populous places of milk depôts for the sale of milk specially prepared for infants.

As the memorandum goes on to state, the provisions as to registration supersede the provisions as to the registration of dairies contained in the Contagious Diseases (Animals) Acts and the orders made thereunder. The provisions as to the inspection of dairies and the prohibition of the supply of milk are based on the provisions of the Public Health (Scotland) Act, 1897. The clause as to the prohibition of the sale of tuberculous milk is taken from the model milk clauses, which have been incorporated in many local Acts, but the scope of the enactment is somewhat extended. The Board of Agriculture and Fisheries have issued an order under the Diseases of Animals Act, 1894, dealing with tuberculous cows, and providing for the payment of compensation in cases of slaughter. The Treasury are prepared, subject to the assent of Parliament, to sanction the payment from the Exchequer of one-half of the net amount paid by way of compensation for a period of five years.

Milk and Dairies (Scotland) Bill.

Mr. MCKINNON WOOD, the Secretary for Scotland, has presented a Bill in the House of Commons "to ensure the purity of milk supplies and to regulate dairies in Scotland." It has been read a first time.

Select Committee on Patent Medicines.

The Select Committee of the House of Commons on Patent Medicines resumed on Thursday, March 27th, the hearing of evidence from the standpoint of owners of proprietary articles.

Elementary Education (Defective and Epileptic Children) Bill.

A Bill has been introduced into the House of Commons by Mr. J. A. PEASE, President of the Board of Education, laying on local education authorities the duty to provide for the education of mentally defective children. It has been read a first time.

Deaths Registration and Burials Bill.

Amongst the Bills introduced in the House of Commons recently is one "to amend the law relating to the registration of deaths and to burials." It was presented by Mr. GEORGE GREENWOOD.

General Medical Council.

The accounts of the General Medical Council and branch councils and of the Dental Registration Fund have been laid on the table of the House of Commons.

The Mental Deficiency Bill.

The Mental Deficiency Bill which was issued on Monday last is substantially the same as the Bill which the Government dropped last session from its programme of measures, owing, it was said, to the shortage of Parliamentary time. There has been considerable rearrangement of the clauses and some interesting omissions. For example, Part I. of the original Bill, which dealt with the central and local authority, has now become Part II. The Board of Control is to be constituted as follows: there will be 15 Commissioners, of whom not more than 12 should be paid, and of those paid four should be legal and four medical, and at least one of the paid and one of the unpaid Commissioners shall be a woman.

Part II., describing the methods of dealing with the mental defective, has now become Part I., and the first clause of the new Bill defines defectives as follows :—

(*a*) Idiots ; that is to say, persons so deeply defective in mind from birth or from an early age as to be unable to guard themselves against common physical dangers ;

(*b*) Imbeciles ; that is to say, persons in whose case there exists from birth or from an early age mental defectiveness not amounting to idiocy, yet so pronounced that they are incapable of managing themselves or their affairs, or, in the case of children, of being taught to do so ;

(*c*) Feeble-minded persons ; that is to say, persons in whose case there exists from birth or from an early age mental defectiveness not amounting to imbecility, yet so pronounced that they require care, supervision, and control for their own protection or for the protection of others, or, in the case of children, are incapable of receiving proper benefit from the instruction in ordinary schools ;

(*d*) Moral imbeciles ; that is to say, persons who from an early age display some permanent mental defect coupled with strong vicious or criminal propensities on which punishment has little or no deterrent effect.

Clause 50 of the original Bill, which prohibited marriage with a defective, is now omitted. The new Bill makes no provision for Scotland, which division of the kingdom will be dealt with by separate legislation.

HOUSE OF COMMONS.

WEDNESDAY, MARCH 26TH.

London Water-supply.

Sir JOHN LONSDALE asked the President of the Local Government Board whether his attention had been called to the reported contamination of part of the London water-supply ; and whether he could give any information on the subject to allay public apprehension.—Mr. BURNS replied : My attention has been drawn to the matter referred to, and I have been in communication with the Metropolitan Water Board, who have been investigating it since the first complaints were received. The unpleasant taste which has been noticed in the water is due to the decay of algæ, but I am glad to be able to state that it is not in any way injurious to health. The source of the trouble having been discovered, steps have, I understand, been taken to remove the ground of complaint.

Medical Benefit and Insured Persons on Holiday.

Mr. RONALD MCNEILL asked the Secretary to the Treasury what arrangement had been made for providing medical benefit for insured persons who might become entitled to it while absent from their usual places of residence for holidays or otherwise.—Mr. MASTERMAN answered : The question is being brought before the Advisory Committee to-morrow. I have nothing to add in the meantime to the previous answers which I have given on this subject.

Mr. RONALD MCNEILL : Will the Regulations be issued as soon as possible ?—Mr. MASTERMAN : There are Regulations issued and provision is being made, but as there is some criticism of the present provisions the whole matter is being brought before the Advisory Committee, which represents the doctors and the Approved Societies. I recognise as much as the honourable gentleman the urgency of the question.

Small-pox in the Navy.

Mr. MACNAMARA (Parliamentary Secretary to the Admiralty) informed Mr. BENTHAM that no small-pox cases had recently been reported as having occurred amongst the crews of any of His Majesty's ships at Devonport other than the *Conqueror*.

Colour Vision Tests in the Mercantile Marine.

Lord HUGH CECIL asked the Parliamentary Secretary to the Board of Trade whether the tests for defective colour vision approved by the Board of Trade differed from those approved by the Admiralty, and if so, whether the Board of Trade, in view of recent scientific investigation and

discussion, intended to adopt the tests now approved by the Admiralty.—Mr. J. M. ROBERTSON said in reply: The colour vision tests in force for the mercantile marine are not identical with those approved by the Admiralty. A Departmental Committee, including a number of eminent scientific men, has recently considered the sight tests for the mercantile marine, and the recommendations of the committee have been generally adopted. The new tests based on their recommendations will come into force on April 1st.

Lord HUGH CECIL: Is it not true that at any rate some of the gentlemen on the committee have long held strong and partisan opinions on the question of colour vision tests, and are therefore not impartial guides on a matter of this kind?—Mr. ROBERTSON: I am not aware that it is so. There are at least half-a-dozen scientific men on the committee, and possibly some of them may be committed to some old opinions.

Sir FREDERICK BANBURY: Can the honourable gentleman give any reason for having a different test to that employed by the Admiralty?—Mr. ROBERTSON: This committee was appointed to give us the best scientific advice, and it was decided to follow it.

School Clinics.

Mr. KING asked the President of the Board of Education whether he was aware of the difficulty experienced by school clinics in that children attending at them during school hours could not be marked as making the attendance required by the code; and whether, with a view of encouraging parents and teachers to send children to school clinics, he would direct that attendance at such should count as attendance at school.—Mr. J. A. PEASE answered: Attendances at clinics for special examination are allowed by the Board to be registered and counted for grant, provided that satisfactory arrangements are made for registration. But owing to the difficulties which at present exist in connexion with the registration for attendances by children for medical treatment at school clinics, hospitals, and private surgeries, and elsewhere, I am not able to amend the code in order to allow attendances at clinics for the purpose of treatment to be reckoned for grant.

Mr. ALDEN: Is the right honourable gentleman aware that attendances at an oculist are allowed?—Mr. J. A. PEASE: Yes, but that is generally by arrangement for immediate attendance. The difficulty is connected with the hospitals, and often the children who attend are not able to be seen owing to the inadequate staff at the hospital, and consequently the children are called upon to attend day after day. I believe those difficulties will also be got over very soon.

The Grants to Scottish Universities.

Answering Mr. JAMES HOGGE, Mr. MASTERMAN said: It is proposed to pay the full grant for this year to all the Scottish universities, subject in the case of Edinburgh University to the appointment of a committee (as has already been done by Glasgow University) to consider the establishment of an inclusive fee in medicine.

Sanatorium Benefit in the Lindsey Division.

Mr. WEIGALL asked the Secretary to the Treasury how many sanatoria there were in the Lindsey area of Lincolnshire: and how many consumptive cases had received treatment in this area up to March 1st last.—Mr. MASTERMAN wrote in reply: Up to March 1st 48 applicants had received sanatorium benefit from the Lindsey Insurance Committee. Twenty-one of these cases were sent to sanatoria and 27 received domiciliary treatment. There are no approved sanatoria actually in the Lindsey area, but the Committee have made arrangements with sanatoria in Lincoln, Withersea, Horsforth, and Ipswich.

Imported Milk.

In reply to Mr. STANIER, Mr. BURNS wrote: In no case was any fresh imported milk during January and February declared to be unfit for human consumption.

THURSDAY, MARCH 27TH.

Ireland and the Mental Deficiency Bill.

Captain O'NEILL asked the Chief Secretary to the Lord Lieutenant for Ireland whether he would during the present session introduce a Mental Deficiency Bill applicable to Ireland in view of the fact that a separate Bill had been promised for Scotland.—Mr. T. W. RUSSELL (on behalf of Mr. BIRRELL): I am not in a position to give any undertaking on the subject.

Scottish Clerks' Association and Medical Benefit.

Mr. MACCALLUM SCOTT asked the Secretary to the Treasury whether he was aware that for ten years before the commencement of the National Insurance Act the Scottish Clerks' Association had a system of medical benefit whereby members called in their own doctors and had refunded to them by the society the doctors' fees and cost of medicine up to 4*s.* per visit; whether he was aware that the system worked well and gave great satisfaction to members; whether, in the opinion of the Insurance Commissioners, this system of medical benefit was a suitable one through which to permit insured persons to make their own arrangements under Section 15, Subsection (3), of the Act; whether one of the largest insurance committees had refused to allow members of the Scottish Clerks' Association to make their own arrangements under this system; whether he could state the grounds of this refusal; and whether the Commissioners proposed to take any steps to advise Insurance Committees on this subject.—Mr. MASTERMAN said in reply: I am aware that the association referred to had special arrangements for the medical attendance of their members. It is primarily the duty of the Insurance Committees concerned to consider whether, in view of these arrangements and of any other local circumstances, members of the association could properly be allowed to make their own arrangements under Section 15 (3) of the Act, and the Scottish Commissioners, after considering all the circumstances, do not feel justified in interfering with the discretion of the Insurance Committees in the matter.

Mr. MACCALLUM SCOTT: Have the Commissioners never taken it upon themselves to advise committees as to what they think is the best way of carrying out the Act?—Mr. MASTERMAN: I think a general circular has been sent out in respect to the various classes of persons who may appropriately be given special arrangements.

Udal Torre Sanatorium.

Lord NINIAN CRICHTON-STUART asked the Secretary to the Treasury whether he was aware that complaints were being made as to the daily routine, the quality of the food, the small amount of food provided for each patient, and the general treatment of patients at the Udal Torre sanatorium in Devonshire; whether this was as contemplated by the Government under the National Insurance Act; and whether he would cause an immediate inquiry to be opened into the matter.—Mr. MASTERMAN replied: On learning that certain insured persons in Wales, who had been accommodated in the sanatorium referred to, had complained as to their treatment, the Welsh Commissioners made an immediate investigation. The medical officer of the Commission has visited the institution and interviewed all the 31 patients still under treatment, and after full inquiry the Commissioners are satisfied that the complaints are devoid of substance. It appears that certain of the patients disliked the discipline and regular routine which in the patients' own interests are essential as part of curative treatment in a sanatorium, and in some cases experienced some preliminary discomfort through being previously unaccustomed to open-air life. The Commissioners are satisfied that neither the complaints as to the routine nor those as to the quality or quantity of food are justified. With regard to the latter they understand that patients have increased in weight during their stay in the sanatorium. I may add that a number of patients, on hearing that certain complaints had been made, volunteered the statement that they had no similar complaint, and that in their opinion everything possible was being done for their benefit.

Medical Benefit in West Hougham.

Mr. RONALD MCNEILL asked the Secretary to the Treasury whether he was aware that there was no panel doctor in the village of West Hougham, Kent, and that no doctor on the panel in Dover, some four miles distant, was willing to attend insured persons in West Hougham; and whether he would say how, under these circumstances, residents in West Hougham could obtain medical benefit to which they are entitled under the National Insurance Act.—Mr. MASTERMAN wrote in reply: I am informed that arrangements have been made whereby every insured person can be allocated to a doctor on the panel, but I am making inquiries as to this particular case.

MONDAY, MARCH 31ST.

Contributions to Hospitals and the National Insurance Act.

Sir J. D. REES asked the Secretary to the Treasury whether he was aware that the Saturday collections for Nottingham Hospital were £1600 less than those of the previous year; that the deficiency was due to the unwillingness of subscribers to continue their subscriptions since the National Insurance tax had been levied; and whether the Government proposed to reimburse hospitals in such cases or to introduce the principle of voluntary contribution under the National Insurance Act.—Mr. WEDGWOOD BENN (on behalf of Mr. MASTERMAN) replied: The answer to the first two parts of the question is in the negative. With regard to the last part, if as the result of experience the voluntary hospitals find that they require State grants, the whole question of State control would necessarily be raised, and at the present time this is not contemplated.

Medical Aid Association.

Sir J. D. REES asked the Secretary to the Treasury whether he was aware that the Friendly Societies operating in the Heanor, Langley Mill, Ripley, and Codnor districts decided to form a Medical Aid Association; that ten doctors of the district thereupon issued a manifesto to the effect that they would refuse under any circumstances to attend uninsured persons in families joining such association; and whether the Government countenanced such action on the part of the said doctors.—Mr. WEDGWOOD BENN (who replied) said: The arrangements made for the medical attendance of uninsured persons do not require the approval of the Government or the Insurance Commissioners.

TUESDAY, APRIL 1ST.

Medical Attendance on Post Office Employees.

Replying to Mr. WARDLE, Mr. H. SAMUEL (Postmaster-General) said: Post Office employees who are insured persons may if they so desire select as their medical attendant any doctor on the local panel. I see no reason for making any change in the rule that uninsured Post Office servants who are granted free medical attendance should receive it at the hands of the Post Office medical officer.

Inspection of Cattle under the Dairies Bill.

Mr. CHARLES BATHURST asked the President of the Local Government Board whether, in view of the opinion generally expressed both by agriculturists and medical officers of local authorities in favour of the inspection of cattle being conducted by qualified veterinary surgeons rather than by medical officers, he would consider the desirability of amending the provisions of the Milk and Dairies Bill accordingly prior to its reintroduction.—Mr. BURNS replied: The Bill has been introduced. I have in it given to veterinary experts a definite position when cattle in dairies have to be inspected.

The Grant for Treatment of Tuberculosis in Wales.

Mr. HAYDN JONES asked the Secretary to the Treasury whether the grant provided in the Estimates for the treatment of tuberculosis in Wales and Monmouthshire could be pooled by the Welsh Insurance Commission in order that the campaign against tuberculosis in Wales might be carried out upon a national basis, and that for this purpose the whole of the principality might be treated as a single unit.—Mr. MASTERMAN said in reply: The answer is in the affirmative. The grants will, in accordance with the note to the Estimate, be calculated upon the net cost of the various schemes approved by the Insurance Commissioners, and it is open to the Welsh Commissioners to approve a conjoint scheme for the whole of Wales.

Maternity Benefit in Scotland.

In answer to Mr. WATT, Mr. MASTERMAN said: No full information is yet available as to the different forms in which the Approved Societies in Scotland are (within the discretion allowed to them under the Act) administering maternity benefit, but I am informed by the Insurance Commissioners that some of them are giving a part of the benefit otherwise than in cash—e.g., paying a doctor or providing necessities required in connexion with the confinement.

Scottish Clerks' Association and Medical Benefit.

Mr. MASTERMAN informed Mr. MACCALLUM SCOTT that he understood that a number of members of the Scottish Clerks' Association had in fact received permission from the Glasgow Insurance Committee to make their own arrangements with doctors not on the panel under Section 15 (3) of the National Insurance Act.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BADGEROW, GEORGE W., M.B., F.R.C.S. Edin., has been appointed Consulting Surgeon for Diseases of the Ear, Nose, and Throat to the Reedham Orphanage, Purley.

BERRY, R., M.B., Ch.B. Manch., has been appointed House Physician at the Salford Royal Hospital.

CURPHEY, A. G., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed District Medical Officer of the Moneague District of St. Ann, Jamaica.

EVANS, GEORGE, M.B. Lond., has been appointed Senior Assistant Medical Officer to the New Essex and Colchester Asylum, Severalls, Colchester.

HOUSTON, T. H., L.R.C.S., L.R.C.P., B.A.O., has been appointed Senior House Surgeon at the Salford Royal Hospital.

HUNT, ARTHUR DOUGLAS, M.D., Ch.B. Liverp., has been appointed Additional Honorary Anæsthetist to the Derbyshire Royal Infirmary.

JOLL, C. A., F.R.C.S. Eng., has been re-appointed Senior Resident Medical Officer at the Royal Free Hospital.

PEAKE, H. G., M.B., Ch.B. Manch., has been appointed Junior House Surgeon at the Salford Royal Hospital.

PITT, OSWALD, M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Casualty House Surgeon at the Salford Royal Hospital.

ROBERTS, W. R. S., M.B., Ch.B. Birm., M.R.C.S., L.R.C.P. Lond., has been appointed Tuberculosis Medical Officer to the Essex County Council.

TOMB, J. A., M.B., Ch.B. Edin., has been appointed Resident Surgical Officer at the Salford Royal Hospital.

WESTMACOTT, FREDERIC HIBBERT, F.R.C.S. Eng., L.R.C.P. Lond., has been appointed Honorary Assistant Aural Surgeon to the Manchester Royal Infirmary.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Junior Resident Medical Officer. Salary at rate of £40 per annum, with board, residence, &c. Also Assistant Physician.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with board and laundry.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Third House Surgeon. Salary £75 per annum, with board, rooms, &c.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £200 per annum, with rooms, fire, light, and attendance.

BIRMINGHAM, RUBERY HILL ASYLUM.—Junior Assistant Medical Officer. Salary £150 per annum, with apartments, board, and washing.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—House Surgeon for six months. Salary £75 per annum, with board, residence, and laundry.

BRIDGWATER HOSPITAL.—House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, lodging, and washing.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN.—House Surgeon, unmarried, for six months. Salary £80 per annum, with apartments, board, attendance, &c.

BRISTOL, COSSHAM MEMORIAL HOSPITAL, Kingswood.—House Surgeon. Salary £50 per annum, with board, lodging, and washing.

BRISTOL GENERAL HOSPITAL.—First House Physician, Second House Physician, and Casualty House Surgeon for six months. Salary £80 per annum, with board, residence, &c. Also Assistant Anæsthetist.

BRISTOL ROYAL INFIRMARY.—Obstetric and Ophthalmic House Surgeon for six months. Salary at rate of £75 per annum, with board, laundry, and apartments.

BROMSGROVE, WORCESTERSHIRE ASYLUM, Barnsley Hall.—Second Assistant Medical Officer. Salary £150 per annum, with quarters, board, washing, and attendance.

BUXTON, DEVONSHIRE HOSPITAL, Derbyshire.—Assistant House Physician for six months. Salary £100 per annum, with apartments, board, and laundry.

CAMBRIDGE, ADDENBROOKE'S HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and laundry.

CANTERBURY BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £160 per annum, with board, lodging, washing, and attendance.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House Physician. Salary £80 per annum, with board, apartments, and laundry.

DARTFORD, DARENTH INDUSTRIAL COLONY, Kent.—Third Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon, unmarried. Salary at rate of £75 per annum, with board, and laundry.

DORCHESTER, DORSET COUNTY ASYLUM.—Third Assistant Medical Officer. Salary £200 per annum and all found.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary £100 per annum, with residence, board, and washing

EAST HAM CORPORATION.—Deputy Medical Officer of Health, Assistant Schools Medical Officer, &c. Salary £250 per annum.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon for six months. Salary at rate of £75 per annum, with board, residence, and laundry.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, apartments, and washing.

EXMINSTER, DEVON COUNTY ASYLUM.—Fourth Assistant Medical Officer. Salary £130 per annum.

GREAT YARMOUTH HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, lodging, and washing.

HELLINGLY, EAST SUSSEX COUNTY ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, washing, and attendance.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physician for six months. Salary 30 guineas.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—Assistant Casualty Medical Officer, unmarried, for six months. Salary £30, with board, residence, &c.

HULL ROYAL INFIRMARY.—Casualty House Surgeon. Salary £80 per annum, with board and lodging.

ITALIAN HOSPITAL, Queen-square, W.C.—Honorary Anæsthetist.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Resident Medical Officer. Salary at rate of £75 per annum, with board and laundry. Also Physician.

LEYTON, WALTHAMSTOW, AND WANSTEAD CHILDREN'S AND GENERAL HOSPITAL.—Resident House Surgeon. Salary £100 per annum, with rooms, board, and washing.

LINCOLN COUNTY HOSPITAL.—Junior House Surgeon, unmarried, for six months. Salary at rate of £100 per annum, with board, residence, and washing.

LIVERPOOL STANLEY HOSPITAL.—House Surgeon. Salary £75 per annum, with board, residence, and laundry.

MANCHESTER, COUNTY ASYLUM, Prestwich. — Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—Senior and Junior House Surgeons. Salaries £120 and £100 per annum respectively, with apartments and board.

METROPOLITAN ASYLUMS BOARD INFECTIOUS HOSPITALS SERVICE.—Junior Assistant Medical Officers, unmarried. Salary £180 per annum, with board, lodging, and washing.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Pathologist and Registrar. Salary at rate of £120 per annum. Also House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon for six months. Salary of House Physician and House Surgeon at rate of £60 per annum, with full board and washing. Salary of Assistant House Physician and Assistant House Surgeon at rate of £40 per annum, with full board and washing. Also Physician and Assistant Physician.

NEWCASTLE-ON-TYNE DISPENSARY.—Vacancies on the Visiting Medical Assistants' Staff. Salary £160 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

NORTHAMPTON, COUNTY BOROUGH OF.—Junior Tuberculosis Officer. Salary £350 per annum.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Casualty Officer for six months. Salary £60 per annum, with board, lodging, and washing. Also House Surgeon. Salary £80 per annum, with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon. Salary £170. Also Resident and Assistant Resident Surgeons for Branch. Salaries £180 and £170 per annum respectively, with apartments, attendance, light, and fuel.

NOTTINGHAM WORKHOUSE AND INFIRMARY.—Two Assistant Resident Medical Officers, unmarried. Salary £150 per annum, with apartments, board, attendance, and washing.

ORMSKIRK UNION.—District and Workhouse Medical Officer and Public Vaccinator. Salary £260 per annum.

OXFORD, WARNEFORD MENTAL HOSPITAL.—Assistant Medical Officer. Salary £150 per annum, with apartments, board, attendance, and laundry.

PADDINGTON-GREEN CHILDREN'S HOSPITAL, London, W.—House Physician and House Surgeon for six months. Salary in each case at rate of £52 10*s.* per annum, with board and residence.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

PRESTON ROYAL INFIRMARY.—Senior House Surgeon, unmarried, for six months. Salary £80 per annum, with board, residence, and washing.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—Senior House Physician and Senior House Surgeon. Salary £75 per annum. Also Junior House Physician and Assistant Pathologist and Junior House Surgeon. Salary £60 per annum each. All for six months, with residence, board, and laundry.

READING, ROYAL BERKSHIRE HOSPITAL.—Second House Surgeon for six months. Salary £80 per annum, with apartments, board, and washing.

RICHMOND, SURREY, ROYAL HOSPITAL.—Assistant House Surgeon. Salary £70 per annum, with board and apartments.

ROCHDALE INFIRMARY.—Two House Surgeons, unmarried. Salaries £80 and £100 per annum respectively, with board, residence, and laundry.

ROTHERHAM HOSPITAL AND DISPENSARY.—Assistant House Surgeon. Salary £80 per annum, with board, lodging, and washing.

ST. BARTHOLOMEW'S HOSPITAL. — Two Assistant Physicians. Also Assistant Physician-Accoucheur.

ST. PETER'S HOSPITAL FOR STONE, &c., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Senior House Surgeon. Salary £100 per annum, with residence, board, &c. Also Junior House Surgeon for six months. Salary £80 per annum, with residence, board, &c.

SHEFFIELD, JESSOP HOSPITAL FOR WOMEN.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, residence, and laundry.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Physician, unmarried. Salary £60 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—Two House Surgeons. Salary £80 per annum. Also Junior House Surgeon. Salary £70 per annum. Also Assistant House Physician. Salary £70 per annum. With board and residence.

SOUTHAMPTON, FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, lodging, and laundry.

SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House Surgeon for six months. Salary at rate of £60 per annum, with rooms, board, and washing.

SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Senior and Junior House Surgeons. Salaries £100 and £90 per annum respectively, with residence, board, and washing.

SOUTHWARK UNION INFIRMARY, East Dulwich-grove, S.E.—Third Assistant Medical Officer. Salary £120 per annum, with board, lodging, and washing.

STIRLING DISTRICT ASYLUM, Larbert, N.B.—Third Assistant Medical Officer (female). Salary £100 per annum, with board, &c.

STROUD GENERAL HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-Street, Chelsea, S.W.—Physician to In-patients. Also Physician to Out-patients.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House Surgeon for six months. Salary at rate of £100 per annum, with apartments, maintenance, and laundry.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Honorary Physician.

WEST HAM AND EASTERN GENERAL HOSPITAL.—Junior House Physician. Salary at rate of £75 per annum, with board, residence, and washing.

WEST HARTLEPOOL, CAMERON HOSPITAL.—House Surgeon. Salary £120 per annum, with board, rooms, laundry, &c.

WILLESDEN URBAN DISTRICT EDUCATION COMMITTEE.—Treatment of Cases of School Children suffering from Ringworm. Salary £100 per annum.

WINCHESTER, ROYAL HAMPSHIRE COUNTY HOSPITAL.—House Surgeon. Salary £80 per annum.

WOKINGHAM, BERKS, PINEWOOD SANATORIUM.—Resident Medical Superintendent. Salary £400 per annum, with residence and board.

WORKSOP DISPENSARY AND VICTORIA HOSPITAL.—Medical Officer and House Surgeon. Salary £150 per annum, with rooms, coal, gas, and attendance.

YORK DISPENSARY AND MATERNITY HOSPITAL.—Resident Medical Officer, unmarried. Salary £140 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of vacancies for Certifying Surgeons under the Factory and Workshop Acts at Rathkeale, in the county of Limerick; at Malton, in the county of York; at Dover, in the county of Kent; at Halstead, in the county of Essex; at Swords, in the county of Dublin; and at Chatham, in the county of Kent.

Births, Marriages, and Deaths.

BIRTHS.

BOLUS.—On March 25th, at St. Aubyn-street, Devonport, the wife of Dr. P. R. Bolus, of a daughter.

DISMORR.—On March 25th, at Milton House, Gravesend, the wife of Cecil James Stewart Dismorr, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

MARRIAGES.

MARTYN—ADDINGTON.—On April 2nd, at St. Mary's Church, Merton, Henry Linnington Martyn, M.B., B.S. Lond., of Eton, Bucks, to Nora Mary Addington, only daughter of Mr. and Mrs. Addington, of Avalon, Merton, Surrey.

SPARROW—INMAN.—On March 27th, at St. Cuthbert's, Philbeach-gardens, E. Cyril Sparrow, M.B., B.S. Camb., to Ethel Mary, younger daughter of the Rev. H. T. and Mrs. Inman.

STEWART—EGLINGTON.—At St. John's, Hammerwich, Staffs, on March 27th, by the Rev. F. Ashwall, uncle of the bride, and the Rev. C. E. Frossard, Matthew J. Stewart, M.B. Glasg., M.R.C.P. Lond., elder son of W. R. Stewart, Dalmellington, Ayrshire, to Clara Eglington, M.B., B.S. Lond., eldest daughter of E. H. Eglington, of Hammerwich, near Lichfield.

TATTERSALL—NIAS.—On March 27th, at the West Croydon Congregational Church, by Rev. F. T. Smythe and Rev. F. E. J. Bird, Norman, third son of Wm. Tattersall, J.P., of Garth, Blackburn, to Ada Marnie, eldest daughter of Mrs. Nias, of Enfield, Brigstock-road, Thornton Heath, Surrey.

WHITEHEAD—MORGAN.—On March 26th, at Colombo, Frederick James Whitehead, of Colombo, to Ethel Mary Morgan, M.B., B.S.

DEATHS.

APPLETON.—On March 28th, Henry Appleton, M.D., Fell. Roy. Soc. Med., at 22, Albion-street, Hull (late of Queen-square, London), aged 72 years.

BREBNER.—On March 30th, at Tayview Villa, West Newport, Fife, Surgeon-Lieutenant-Colonel Alex. Brebner (retired), Army Medical Staff, aged 72.

BUCKNALL.—Thomas Rupert Hamden Bucknall, M.D., M.S. London, F.R.C.S., late of University Hospital, London, aged 39, died at "Restholme," Bexhill, on Tuesday, March 18th, 1913.

GALABIN.—On March 25th, at Tapley, Bishopsteignton, from pneumonia, after five days' illness, Alfred Lewis Galabin, M.A., M.D. Cantab., F.R.C.P., aged 70.

SAVORY.—On March 27th, at Crouch End, Charles Tozer Savory, M.D., formerly of Canonbury, aged 83.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

"THE RISING OF THE LIGHTS."

To the Editor of THE LANCET.

SIR,—"The Riseing of the Lights," or "Lytes," as sometimes spelt, was used in the seventeenth century and later as a synonym for "pulmonary phthisis." "Lights" or "Lytes" meant "lungs," as your correspondent "G. S. M." explains. For in "Mary Doggett, Her Book of Receipts" (1682), now in the MS. department of the British Museum, we find a prescription for "Ye Riseing of ye Loungs, or Phtisick." The expression was probably not used in the sense of "enterotaxis," or migration or displacement of the organs, as suggested in your annotation on March 15th, p. 767, but meant that the lungs were literally expectorated piecemeal. Even at the present day one is sometimes assured by the laity that some person supposed to be suffering from pulmonary tuberculosis has "coughed up" the greater part of one or both lungs, and has been cured by such a remedy as the one prescribed for "The Riseing of the Lytes" in "The Lady Sedley's Receipt Book"—viz., "A penyworth of Saffron steeped in red Rose Water."

A reference to the subject was made by the writer in a paper read before the Historical Section of the Royal Society of Medicine on March 5th ult., entitled "'The Lady Sedley's Receipt Book' (1686) and other Seventeenth Century Receipt Books."

I am, Sir, yours faithfully,
LEONARD GUTHRIE.

Upper Berkeley-street, W., March 28th, 1913.

To the Editor of THE LANCET.

SIR,—It is quite 25 years since I came across the expression, and then it was used by the late Dr. W. H. Stone, of St. Thomas's Hospital. His father had been rector or vicar of Spitalfields, and from his acquaintance in earlier life with his father's parishioners he had acquired an extensive knowledge of popular medical lore. So far as I can remember, the term "rising of the lights" refers to the condition of the chest resulting from chronic bronchitis and emphysema. The forward projection of the clavicles and upper ribs is not at all badly described by the term. I believe that my recollection would be confirmed by other St. Thomas's men who knew Dr. Stone.

I am, Sir, yours faithfully,
Llandrindod Wells, Radnorshire, March 31st, 1913. R. ACKERLEY.

To the Editor of THE LANCET.

SIR,—"G. S. M.'s" explanation and your own note made me laugh more than a little. You needn't go as far as "Bonnie Scotland" for the explanation, and it is evident that neither of you are acquainted with the peculiarities of a Lancashire hospital out-patient department. "Rising o'th lights" simply means flatulent dyspepsia and nothing else. It is a not at all uncommon expression of patients as describing their symptoms. One "lady" said, "Aw've got risin' o'th leets, and aw've been swallowing 'shot corns' to keep 'em deawn," and she *had*, and had been dosing herself with leaden pellets to that purpose. This is an actual fact. What they imagine is up with them passeth understanding, for they'll imagine anything, and possibly think their lungs are oozing through their ears. Even that is not wilder than things I have heard. But certain it is that "rising o'th lights" means an eructative dyspepsia only. Just a "gem" or two. When children are sent for their parents' or friends' medicine and tender the usual penny, they say, "I want a penn'orth o' pison" (the superfluity of any "please" is disregarded). Liniments are all marked "Poison," and that's what they mean. Another, a home patient, had been prescribed suppositories, and a small girl coming for a fresh supply said, "I want another penn'orth o' them seat pills." No doubt hundreds of other medical men could, as I could, multiply these instances by hundreds.

I am, Sir, yours faithfully,
March 31st, 1913. AMUSED.

To the Editor of THE LANCET.

SIR,—I believe I am correct in saying that the expression "rising of the lights," which occurs so commonly in the old bills of mortality, signifies emphysema of the lungs, which with its associated bronchitis is a frequent cause of death. Butchers, of course, invariably call the lungs of animals the "lights." I am, Sir, yours faithfully,
March 27th, 1913. J. B. N.

THE DRUG DANGER—A WARNING.

UNDER the above title Mr. Norman Porritt, consulting surgeon to Huddersfield Royal Infirmary, has written a striking pamphlet describing the prevalence of the drug habit, especially with relation to opium and its alkaloids, the coal-tar derivatives, and cocaine, its causes and insidiousness, its effect on the moral fibre of the victim, and so forth. The author emphasises the fact

of the induced self-deception and dishonesty that almost invariably take possession of even the naturally most honourable characters under the insidious deteriorating effects of the drug, so that rigid external control is practically an essential for the successful treatment of the habit. He speaks favourably of the homes of the Church of England Temperance Society, by which society (4, Sanctuary, Westminster) the pamphlet is published.

THE NEW STANDARD DICTIONARY.

IN a few weeks Messrs. Funk and Wagnalls will be issuing a new edition of the Standard Encyclopædic Dictionary, over which, it is stated, £300,000 have been spent. More than 300 specialists and editors have been engaged for some years in its preparation, among whom are Lord Avebury, for financial terms; Sir George Birdwood, M.D., Indian terms; Admiral Sir Cyprian Bridge, naval; Colonel Sir David Bruce, M.D., tropical diseases; Sir James Crichton-Browne, medical; Earl Roberts, military; Professor J. P. Mahaffy, classical; and other well-known names, British and foreign. The dictionary will define over 450,000 terms of all kinds. The 7000 black-and-white illustrations will be supplemented by a series of colour plates. A noteworthy new feature is that whereby when quotations are used to establish some point of definition or pronunciation the exact reference is given.

150,000 MICROSCOPES.

THE optical and mechanical engineering works of Ernst Leitz, of Wetzlar, have recently completed their 150,000th compound microscope. This instrument has been presented to Professor Ehrlich, of Frankfort-on-Main. The 100,000th Leitz microscope was presented to the late Robert Koch.

G.V.—We understand that under the Local Government Board General Order of Dec. 19th, 1912, medical practitioners notifying cases of pulmonary tuberculosis, as required by Article V. of the Order, are entitled to payment of a fee for each notification of 2*s.* 6*d.* if it is given by the medical man in the capacity of private practitioner and 1*s.* if it is given in his capacity as medical officer of a hospital or Poor-law institution or as a district medical officer. It is not necessary for the medical practitioner to send any account for these fees, which become payable by the local authority at the end of the quarter. The procedure and the fees are identical in the case of insured and non-insured persons, no distinction having been made in the Order under which the payment is authorised.

Dr. J. B. Hurry (*Westfield, Reading*) would be glad to know where the engraving of the late Lord Lister which was published a few years ago can be obtained.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

THE following Congresses, Conferences, and Exhibitions are announced for 1913:—

April 3rd–9th (London).—International Congress of Historical Studies.
" 6th–12th.—Health Week.
" 15th–18th (Wiesbaden).—Congress of Internal Medicine.
" 22nd–25th (London L.C.C. Technical Institute, Vincent-square).—Annual Nursing and Midwifery Conference.
" 26th (Ghent) (opens).—International Exhibition.
May 15th–18th (Paris).—Twenty-first Annual Congress of the Royal Institute of Public Health.
May–October (Leipzig).—First International Building Exhibition.
June 24th–27th (London, Ontario).—Canadian Medical Association.
July 7th–12th (Exeter).—Twenty-eighth Congress of the Royal Sanitary Institute.
" 16th–18th (Oxford, Keble College).—Oxford Ophthalmological Congress.
" 22nd–25th (Brighton).—Eighty-first Annual Meeting of the British Medical Association.
Aug. 4th and 5th (London, Caxton Hall).—English-speaking Conference on Infant Mortality.
" 6th–12th.—(London).—Seventeenth International Congress of Medicine.
" 20th–26th (Ghent).—Third International Congress of Neurology and Psychiatry.
Sept. 2nd–6th (Groningen).—International Physiological Congress.
" 9th–13th (Vienna).—Second International Congress of Life Saving and Prevention of Accidents.
" 10th–17th (Birmingham).—British Association.
" 22nd–28th (Milan).—Fourteenth International Anti-alcoholic Congress.
(London).—Historical Medical Exhibition. (Organised by Mr. Henry S. Wellcome.)
(London, Earl's Court).—Imperial Services Exhibition.
(Chicago).—Congress of the International Association of Refrigeration.
(Washington).—Congress of American Physicians and Surgeons.
(Buffalo).—Fourth International Congress of School Hygiene.

In 1914:—
Aug. 10th–15th (St. Petersburg).—Twelfth International Congress of Ophthalmology.
(Vienna).—Third International Congress for Professional Diseases.
(Auckland, N.Z.).—Australasian Medical Congress.
(St. Petersburg).—Third Mendeléeff Congress of Pure and Applied Chemistry and Physics.
(Washington, D.C.).—International Congress of Americanists.
(London).—International Dental Congress.
(Paris).—Fourth International Medical Congress on Industrial Accidents.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.
THURSDAY.—Mr. A. D. Waller: The Various Inclinations of the Electrical Axis of the Human Heart.—Prof. J. H. Priestley and Mr. R. C. Knight: On the Nature of the Toxic Action of the Electric Discharge upon Bacillus Coli Communis (communicated by Prof. J. B. Farmer).—Surgeon-General Sir D. Bruce, Major D. Harvey, Major A. E. Hamerton, and Lady Bruce: (1) Morphology of the Various Strains of the Trypanosome causing Disease in Man in Nyasaland—II., The Wild Game Strain; (2) III., The Wild Glossina Morsitans Strain; (3) Infectivity of Glossina Morsitans in Nyasaland.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
FRIDAY.
CLINICAL SECTION (Hon. Secretaries—C. H. Fagge, W. Essex Wynter): at 8.30 P.M.
Mr. E. M. Corner and Dr. P. H. Mitchiner: Case of Chronic Bone Disease shown in 1908.
Mr. E. M. Corner: A Boy with Ossification of Muscle after Injury.
Mr. E. M. Corner and Mr. C. V. Anderson: Case of Recovery from Severe Electric Burns.
Mr. C. H. Fagge: (1) Case of Myeloma of Tibia Seven Years after Enucleation; (2) Re-formation of Fibula after Complete Removal of Diaphysis for Acute Infective Periostitis.
Dr. F. Parkes Weber: (1) Atelelosis in a Man of 45; (2) Atelelosis in a Woman of 20.
And other Cases.
Paper:
Mr. Lockhart Mummery: Ulcerative Colitis.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, Lecture Theatre of the Society, 17, Bloomsbury-square, W.C.
TUESDAY.—8 P.M., Papers:—Dr. F. B. Power and Mr. H. Browning, jun.: The Chemical Examination of Euphorbia Pilulifera.—Dr. F. B. Power and Dr. A. H. Salway: The Chemical Examination of the Roots of Phaseolus Multiflorus.—Mr. J. Small: (1) The Identification Value of Hairs in the Examination of Herbs and Leaves (illustrated with lantern slides); (2) Note on False Nux Vomica Seed; (3) A New Adulterant of Buchu.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor-road, S.W.
WEDNESDAY.—5 P.M., Major H. Ensor, D.S.O., R.A.M.C.: The Duties of an Officer of the Royal Army Medical Corps, attached to an Infantry Battalion, on Active Service.

HUNTERIAN SOCIETY, St. Bartholomew's Hospital (Library), E.C.
WEDNESDAY.—9 P.M., Resumed Discussion on the Uses of Tuberculin (opened by Dr. N. Raw, Liverpool). The following gentlemen will take part:—Dr. T. J. Horder and Dr. T. G. Lyon. Dr. A. Latham will reply.

CHILD STUDY SOCIETY, LONDON, Royal Sanitary Institute, 90 Buckingham Palace-road, S.W.
THURSDAY.—7.30 P.M., Mr. H. Holman: Child Study and the National Health.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.
THURSDAY.—8.30 P.M., Dr. A. P. Luff: The Various Forms of Fibrositis and their Treatment. (Harveian Lecture.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.
TUESDAY AND THURSDAY.—5 P.M., Prof. A. D. Waller: The Electrical Action of the Human Heart. (Oliver-Sharpey Lectures.)

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.
MONDAY.—10 A.M., Dr. Simson: Diseases of Women. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.
TUESDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Diseases of the Skin
WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Mr. Bishop Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.
THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Operations. 2.30 P.M., Mr. Dunn: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Robinson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Operations. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Davis: Operations of the Throat, Nose, and Ear. Mr. Bishop Harman: Diseases of the Eye. 2 P.M., Medical and Surgical Clinics. X Rays. Operations.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—Out-patient Demonstrations:—10 A.M. Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2.15 P.M., Mr. W. Turner: Surgery. 3 P.M., Mr. W. Turner: Operations. 3.15 P.M., Sir Dyce Duckworth: Medicine. 4.15 P.M., Mr. R. Lake: Ear and Throat. 3.15 P.M., Special Lecture:—Sir Dyce Duckworth: Phlebitis and its Treatment.

TUESDAY.—Out-patient Demonstrations:—10 A.M., Dr. G. Holmes: Medical. Mr. A. J. Walton: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Mr. R. Carling: Surgery. 3.15 P.M., Dr. G. Rankin: Medicine. 4.30 P.M., Special Lecture:—Dr. G. Holmes: Paraplegia.

WEDNESDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. P. Cole: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—2 P.M., Mr. L. V. Cargill or Mr. Choyce: Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.15 P.M., Mr. Cargill: Eye Clinique. 4.30 P.M., Mr. C. C. Choyce: Surgery.

THURSDAY.—Out-patient Demonstrations:—10 A.M., Dr. Singer: Medical. Mr. H. Curtis: Surgical. 12 noon, Mr. G. N. Biggs: Throat, Nose, and Ear.—2 P.M., Mr. R. Carling or Mr. W. Turner: Operations. Dr. A. Davies: Pathological Demonstration. 3.15 P.M., Dr. R. Wells: Medicine. 4.30 P.M., Special Lecture:—Dr. C. E. Zundel: Auricular Fibrillation.

FRIDAY.—Out-patient Demonstrations;—10 A.M., Dr. G. Holmes: Medical. Mr. A. J. Walton: Surgical. 12 noon, Dr. H. MacCormac: Skin.—2 P.M., Mr. L. McGavin: Operations. 2.15 P.M., Sir John Rose Bradford; Medicine. 3.15 P.M., Mr. L. McGavin: Surgery.

SATURDAY.—Out-patient Demonstrations: 10 A.M., Dr. F. Langmead: Medical. Mr. P. Cole: Surgical. 11 A.M., Mr. R. E. Bickerton: Eye.—10 A.M., Dr. W. Steuart: Radiography.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.

Course of Lecture-Demonstrations on Diseases of the Chest, with Special Reference to Tuberculosis (including a Tuberculin Course):—

MONDAY.—4.30 P.M., Dr. M. Leslie.
THURSDAY.—4.30 P.M., Dr. Kellie.
FRIDAY.—4.30 P.M., Dr. A. C. Jordan.

LONDON HOSPITAL MEDICAL COLLEGE (UNIVERSITY OF LONDON), London Hospital, Mile End-road, E.

Course of Lectures and Demonstration on Neurology (illustrated with Clinical Cases):—

MONDAY.—4.30 P.M., Dr. T. Thompson: The Postero-Lateral Scleroses.
TUESDAY.—4.30 P.M., Dr. Fildes: Serological Investigation.
WEDNESDAY.—4.30 P.M., Dr. G. Holmes: Differential Diagnosis of Hemiplegia.
FRIDAY.—4.30 P.M., Dr. H. Head: Hysteria.

ANCOATS HOSPITAL, Manchester.

THURSDAY.—4.15 P.M., Dr. W. J. S. Bythell: Some Points in X Ray Examinations. (Post-Graduate Clinic.)

For further particulars of the above Lectures, &c., see Advertisement Pages.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 2nd, 1913.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Mar. 27	29·70	W.	0·20	76	55	42	43	43	Overcast
,, 28	29·34	S.E.	0·01	75	53	43	47	48	Overcast
,, 29	29·59	S.E.	0·19	71	55	43	45	45	Cloudy
,, 30	29·72	S.W.	0·06	97	51	45	46	48	Cloudy
,, 31	29·82	W.	...	52	52	45	44	46	Foggy
April 1	29·75	S.W.	0·05	72	52	44	46	47	Cloudy
,, 2	30·04	S.W.	0·17	86	54	38	42	45	Cloudy

The following journals, magazines, &c., have been received:—Burlington Magazine, Bedrock, Journal d'Urologie, Archiv für Experimentelle Pathologie und Pharmakologie, Bristol Medico-Chirurgical Journal, Monotype Recorder, Revista de la Sociedad Médica Argentina, Revue de Gynécologie, American Practitioner, South African Medical Record, Transvaal Medical Journal, Revue d'Hygiène, L'Ospedale Maggiore, Revista Mensile, Schmidts Jahrbücher, Journal of the Royal Sanitary Institute, Archives of Internal Medicine, Hospital Assistant (India), Homœopathic Recorder, Man, Yellow Fever Bureau Bulletin, Jahrbuch für Kinderheilkunde, Women's Industrial News, British Journal of Inebriety, St. Bartholomew's Hospital Journal.

Communications, Letters, &c., have been received from—

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J.—Mr. G. Llewellyn Jones, Llangefni; Mr. W. Jones, Lond.; J. B. N.

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